

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Sent: Thu, 18 Jun 2020 18:56:16 +0000
To: Kuehl, Debra B. (CDC/DDID/NCIRD/OD);Muehlenbachs, Atis (CDC/DDID/OD);Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP)
Subject: DART_EXT 0001 Rev 1 ELISA for Detection of SARS-CoV-2 Antigen-Specific IgA, IgG, and IgM.docx
Attachments: DART_EXT 0001 Rev 1 ELISA for Detection of SARS-CoV-2 Antigen-Specific IgA, IgG, and IgM.docx

Hi all –

(b)(5)

Thanks,

Jarad

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Sent: Sat, 28 Mar 2020 18:40:05 +0000
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Subject: DRAFT SARS-CoV-2 spike ELISA_JS
Attachments: DRAFT SARS-CoV-2 spike ELISA_JS.docx

Hi Natalie –

Here are my suggested changes for the high throughput format, take a look and let me know what you think.

Thanks,

Jarad

From: Chavez, Pollyanna R. (CDC/DDID/NCHHSTP/DHPSE)
Sent: Fri, 3 Apr 2020 15:57:43 +0000
To: Brooks, John T. (CDC/DDID/NCHHSTP/DHPSE);Chavez, Pollyanna R. (CDC/DDID/NCHHSTP/DHPSE);Delaney, Kevin P. (CDC/DDID/NCHHSTP/DHPSE);DiNenno, Elizabeth (CDC/DDID/NCHHSTP/DHPSE);Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE);Linley, Laurie (CDC/DDID/NCHHSTP/DHPSE);Masciotra, Silvina (CDC/DDID/NCHHSTP/DHPSE);Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD);Peruski, Anne (CDC/DDID/NCHHSTP/DHPSE);Tanner, Mary (CDC/DDID/NCHHSTP/DHPSE)
Subject: FDA approves first coronavirus serologic rapid test through emergency use authorization

Dear Core wkg members,

Not HIV related but I just wanted to pass along as FYI:

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-daily-roundup-april-2-2020>

To date, 25 [emergency use authorizations](#) have been issued for diagnostic tests. Notably, the FDA issued an [emergency use authorization](#), on April 1, 2020, to [Cellex Inc.'s qSARS-CoV-2 IgG/IgM Rapid Test](#) which is the first serology test to date to receive authorization to test for the presence of coronavirus antibodies. Cellex's labeling notes that test results from this serology test should not be used as the sole basis for diagnosis and can only aid in the diagnosis of patients in conjunction with a medical review of symptoms and results of other laboratory tests. Cellex's test is also limited to laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) to perform moderate and high complexity tests.

News article: <https://www.360dx.com/regulatory-news-fda-approvals/cellex-receives-first-fda-emergency-use-authorization-coronavirus#.XodZpE2P7cs>

Package insert: <https://www.fda.gov/media/136625/download>

Letter of authorization: <https://www.fda.gov/media/136622/download>

Fact sheet for Healthcare providers: <https://www.fda.gov/media/136623/download>

Fact sheet for Patients: <https://www.fda.gov/media/136624/download>

Stay well,

Pollyanna R. Chavez, PhD

(Pronouns: she, her, hers)

Epidemiologist |Special Studies and Diagnostics Team

Behavioral and Clinical Surveillance Branch (BCSB)

Division of HIV/AIDS Prevention (DHAP)

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP)

Centers for Disease Control and Prevention

Tel: 404-639-1742 | Mobile: (b)(6) Fax: 404-639-8640

Email: geo5@cdc.gov

Mailing Address: 1600 Clifton Road NE, MS US8-4, Atlanta, GA 30329

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Sent: Tue, 5 May 2020 18:51:28 +0000
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Subject: Fwd: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Natalie,

Please verify you only wanted 90 specimens, I'm assuming

(b)(5)

Also, you want them to send 50 or 100 uL?

Thanks

Jeff

From: Stramer, Susan <Susan.Stramer@redcross.org>

Sent: Tuesday, May 5, 2020 2:03:16 PM

To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; thanks for the list; I asked the lab to find the samples and aliquot/send them ASAP. Is there any special paperwork that needs to accompany them (50-100uL of each)? Does Kacie use the same address as before?

And there are 90 in the list that you sent, but there were 101 that were listed as "confirmed" reactive so far; what about the other 11? If you don't need extra volume of those, can you send me the sample IDs just so that I have a listing of reactives to date?

Thanks, Susan

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>

Sent: Tuesday, May 5, 2020 1:25 PM

To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>

Subject: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Monica and Susan,

Regarding the neut testing in bullets 2 and 3, the response leadership has expressed urgency in completing that testing and asked if sending those additional volumes (specimen list attached) could be expedited. Could you provide a time estimate on shipping those to CDC?

Thank you,
Jeff

Jeff Johnson

Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Tuesday, May 5, 2020 1:00 AM

To: Stramer, Susan <Susan.Stramer@redcross.org>; Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rzh7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggi2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lk6@cdc.gov>

Subject: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

All,

Thank you for a very productive call today. Please find attached notes from today's meeting. Please note that I did not include specific results in the notes as results are still preliminary and awaiting further confirmatory tests.

As discussed, the next steps for SARS-CoV-2 seroprevalence study of ARC blood donation specimens are as follows:

1. Confirmatory testing of screened reactive specimens collected during December–January to be completed in Natalie's lab. Natalie to send ARC results of confirmed reactive specimens.
2. Neutralization antibody testing to be performed by early next week on confirmed reactive specimens collected during December–January. Natalie to send ARC results of neutralization testing. Natalie will also send ID numbers to ARC to request additional aliquots needed for further neutralization testing.
3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
4. Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.
5. ARC sera already received from CA, OR, WA from March to undergo screening in Jarad's lab followed by confirmation in Natalie's lab.
6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,
Monica

Monica E Patton, MD

CDR, US Public Health Service

Burden and Severity Team, Epidemiology Task Force

2019 Novel Coronavirus Response

Centers for Disease Control and Prevention (CDC)

Mobile: (b)(6) WhatsApp: (b)(6)

gnh9@cdc.gov

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Sent: Mon, 8 Jun 2020 16:19:05 +0000
To: Freeman, Brandi (CDC/DDID/NCIRD/DVD);Harcourt, Jennifer (CDC/DDID/NCIRD/DVD);Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR);Mills, Lisa (CDC/DDID/NCIRD/DVD);Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR);Peret, Teresa (CDC/DDID/NCIRD/DVD);Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR);Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR);Tamin, Azaibi (CDC/DDID/NCIRD/DVD);Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR)
Subject: FW: DART review - SARS-CoV-2 ELISA
Attachments: RVB.RI.METHOD.017v_04_MS adapted_DART review form_consensus 5 Jun 20.docx, RVB.RI.METHOD.017V_04_MS adapted_DART Consensus_5 Jun 20.docx

All,
I'm CCing these for your awareness.

We are now being required to have some of our SOPs undergo "review", which is pretty extensive. I had been handling QMS myself since Hyatt left, but I think I'm going to have to have one of you take that baton as QMS manager, lest things get constantly stalled with me.

Can anyone step up to the plate as a volunteer? You're first job will to address some of the comments in the review of our ELISA SOP, and we can talk through that before you do so.

Natalie

From: Weldon, William C. (CDC/DDID/NCIRD/DVD) <wiw4@cdc.gov>
Sent: Monday, June 8, 2020 7:46 AM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Cc: Bernstein, Shawnte R. (CDC/DDID/NCIRD/DVD) (CTR) <auk4@cdc.gov>; Marcus, Whitney (CDC/DDID/NCIRD/DVD) (CTR) <ovq9@cdc.gov>
Subject: DART review - SARS-CoV-2 ELISA

Hi Natalie,

Sorry its taken so long to get this review back to you. Attached is a review form summarizing some of the elements that DART is reviewing SOPs and validation on and the SOP with comments from reviewers.

Happy to setup a meeting to discuss the comments with some of the reviewers.

Thanks,

Will

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Sent: Thu, 7 May 2020 20:47:03 +0000
To: Petway, Marla (CDC/DDID/NCEZID/DSR);Browning, Peter (CDC/DDID/NCIRD/DBD) (isk8@cdc.gov)
Cc: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Subject: FW: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

FYI – Red Cross is sending back a few samples we already tested for Natalie to do neutralization testing on – they should go directly to her lab.

Thanks,

Jarad

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Thursday, May 7, 2020 4:46 PM
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Jarad,
These rush samples coming to you from the ARC are for Natalie to do microneuts. Please forward to her.

Thanks!
Jeff

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Sent: Thursday, May 7, 2020 4:42 PM
To: Grimm, Kacie E. <kacie.grimm@redcross.org>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>
Cc: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Saa, Paula <paula.saa@redcross.org>; Holley, Gary C. <Gary.Holley@redcross.org>; Townsend, Rebecca L. <Rebecca.Townsend@redcross.org>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Great, thanks for the information and we appreciate the quick turn-around in shipping the samples.
Michele

S. Michele Owen
CDC IMS LAB TF

2019 nCoV Response

mowen@cdc.gov

W 404 639-1046

C 

From: Grimm, Kacie E. <kacie.grimm@redcross.org>

Sent: Thursday, May 7, 2020 4:30 PM

To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Saa, Paula <paula.saa@redcross.org>; Holley, Gary C. <Gary.Holley@redcross.org>; Townsend, Rebecca L. <Rebecca.Townsend@redcross.org>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Importance: High

Hello All,

The ARC has shipped that additional volume that was requested. Below is the FedEx tracking number for the shipment that will arrive tomorrow. Please let us know if you need anything else.

FedEx: 181089487600

Thanks,

Kacie Grimm
Associate, Scientific Affairs

American Red Cross
Scientific Support Office
9315 Gaither Road
Gaithersburg, MD 20877
301-795-4730 (P)
301-977-8163 (F)

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Wednesday, May 6, 2020 4:36 PM

To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

The shipping address is:

Centers for Disease Control and Prevention
Attn: Peter Browning
MPIR Unit
1600 Clifton Rd. NE
Atlanta, GA 30329-4027
Phone 404-639-3669
isk8@cdc.gov

Thanks!
Monica

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 3:35 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

If available, please provide 100 uL of the requested aliquots. We won't need any additional documentation if you use the same ARC ID numbers associated with the specimens.

Thank you,
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 3:24 PM
To: Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thanks!

From: Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>
Sent: Tuesday, May 5, 2020 3:22 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – N CA was 12 reactive and 23 retested. I could have mis-spoke, or was not clear about that (I was trying to say a point about the retest vs the reactives). Apologies.

All other numbers are correct.

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 3:19 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; these were the notes that I took yesterday:

N CA = 23/519
S CA = 11/702
OR/WA = 16/778 (all from Jan)

MA = 11/2062
WI = 17/1594
MI = 5/432
CT = 18/1580 (all from Jan)

Total = 101....

Thanks, Susan

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 5, 2020 3:05 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – We only have 90 confirmed reactive specimens thus far out of 208 screened reactive specimens. Some confirmatory testing is ongoing in Natalie’s lab – we will definitely let you know if/when we have additional confirmed reactive specimens.

Thanks,
Monica

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 2:03 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; thanks for the list; I asked the lab to find the samples and aliquot/send them ASAP. Is there any special paperwork that needs to accompany them (50-100uL of each)? Does Kacie use the same address as before?

And there are 90 in the list that you sent, but there were 101 that were listed as “confirmed” reactive so far; what about the other 11? If you don’t need extra volume of those, can you send me the sample IDs just so that I have a listing of reactives to date?

Thanks, Susan

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 1:25 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Monica and Susan,

Regarding the neut testing in bullets 2 and 3, the response leadership has expressed urgency in completing that testing and asked if sending those additional volumes (specimen list attached) could be expedited. Could you provide a time estimate on shipping those to CDC?

Thank you,
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Tuesday, May 5, 2020 1:00 AM

To: Stramer, Susan <Susan.Stramer@redcross.org>; Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggi2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <kg6@cdc.gov>

Subject: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

All,

Thank you for a very productive call today. Please find attached notes from today's meeting. Please note that I did not include specific results in the notes as results are still preliminary and awaiting further confirmatory tests.

As discussed, the next steps for SARS-CoV-2 seroprevalence study of ARC blood donation specimens are as follows:

1. Confirmatory testing of screened reactive specimens collected during December–January to be completed in Natalie's lab. Natalie to send ARC results of confirmed reactive specimens.
2. Neutralization antibody testing to be performed by early next week on confirmed reactive specimens collected during December–January. Natalie to send ARC results of neutralization testing. Natalie will also send ID numbers to ARC to request additional aliquots needed for further neutralization testing.
3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
4. Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.
5. ARC sera already received from CA, OR, WA from March to undergo screening in Jarad's lab followed by confirmation in Natalie's lab.
6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,

Monica

Monica E Patton, MD

CDR, US Public Health Service

Burden and Severity Team, Epidemiology Task Force

2019 Novel Coronavirus Response

Centers for Disease Control and Prevention (CDC)

Mobile: (b)(6) /WhatsApp: (b)(6)

gnh9@cdc.gov

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From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Sent: Mon, 11 May 2020 16:04:31 +0000
To: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR)
Cc: Tamin, Azaibi (CDC/DDID/NCIRD/DVD);Harcourt, Jennifer (CDC/DDID/NCIRD/DVD);Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR)
Subject: FW: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens
Attachments: SKM_C45820050714310.pdf, Aliquots for CDC microneuts.xlsx
Importance: High

Megan,

We can use these specimen IDs for the red cross aliquots. If you need to just use the last 4 digits that's ok.

If it's easier to print out labels, you can ask Sandra to show you the regular label maker (not barcode) or just on a regular printer.

From: Grimm, Kacie E. <kacie.grimm@redcross.org>
Sent: Thursday, May 7, 2020 4:30 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Saa, Paula <paula.saa@redcross.org>; Holley, Gary C. <Gary.Holley@redcross.org>; Townsend, Rebecca L. <Rebecca.Townsend@redcross.org>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens
Importance: High

Hello All,

The ARC has shipped that additional volume that was requested. Below is the FedEx tracking number for the shipment that will arrive tomorrow. Please let us know if you need anything else.

FedEx: 181089487600

Thanks,

Kacie Grimm
Associate, Scientific Affairs

[American Red Cross](#)
[Scientific Support Office](#)

9315 Gaither Road
Gaithersburg, MD 20877
301-795-4730 (P)
301-977-8163 (F)

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Wednesday, May 6, 2020 4:36 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

The shipping address is:

Centers for Disease Control and Prevention
Attn: Peter Browning
MPIR Unit
1600 Clifton Rd. NE
Atlanta, GA 30329-4027
Phone 404-639-3669
isk8@cdc.gov

Thanks!
Monica

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 3:35 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

If available, please provide 100 uL of the requested aliquots. We won't need any additional documentation if you use the same ARC ID numbers associated with the specimens.

Thank you,
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 3:24 PM
To: Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thanks!

From: Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>
Sent: Tuesday, May 5, 2020 3:22 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – N CA was 12 reactive and 23 retested. I could have mis-spoke, or was not clear about that (I was trying to say a point about the retest vs the reactives). Apologies.

All other numbers are correct.

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 3:19 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; these were the notes that I took yesterday:

N CA = 23/519
S CA = 11/702

OR/WA = 16/778 (all from Jan)

MA = 11/2062

WI = 17/1594

MI = 5/432

CT = 18/1580 (all from Jan)

Total = 101....

Thanks, Susan

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Tuesday, May 5, 2020 3:05 PM

To: Stramer, Susan <Susan.Stramer@redcross.org>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jjj6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – We only have 90 confirmed reactive specimens thus far out of 208 screened reactive specimens. Some confirmatory testing is ongoing in Natalie’s lab – we will definitely let you know if/when we have additional confirmed reactive specimens.

Thanks,
Monica

From: Stramer, Susan <Susan.Stramer@redcross.org>

Sent: Tuesday, May 5, 2020 2:03 PM

To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jjj6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; thanks for the list; I asked the lab to find the samples and aliquot/send them ASAP. Is there any special paperwork that needs to accompany them (50-100uL of each)? Does Kacie use the same address as before?

And there are 90 in the list that you sent, but there were 101 that were listed as “confirmed” reactive so far; what about the other 11? If you don’t need extra volume of those, can you send me the sample IDs just so that I have a listing of reactives to date?

Thanks, Susan

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 1:25 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Monica and Susan,

Regarding the neut testing in bullets 2 and 3, the response leadership has expressed urgency in completing that testing and asked if sending those additional volumes (specimen list attached) could be expedited. Could you provide a time estimate on shipping those to CDC?

Thank you,
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 5, 2020 1:00 AM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rzh7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggi2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>
Subject: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

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3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
4. Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.
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6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,
Monica

Monica E Patton, MD

CDR, US Public Health Service
Burden and Severity Team, Epidemiology Task Force
2019 Novel Coronavirus Response
Centers for Disease Control and Prevention (CDC)
Mobile: (b)(6) /WhatsApp: (b)(6)
gnh9@cdc.gov


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Doc No: ARC-DOC-001284	Subdiv: 18-Laboratory Testing	Doc Level: 4 - Tool or Supporting Document	ARC Version: 2.2
Level 4 Subtype: Form	Training Subtype:	Mang Fac: Testing Support	

American Red Cross Washington, DC 20006	Form: Shipping Information Form	 American Red Cross
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Requested by/Date (Initial/Date): (b)(6)

Ship To:

Name: _____	Centers for Disease Control and Prevention	_____
Affiliation: _____	Attn: Peter Browning	_____
Street Address: _____	1600 Clifton Rd. NE	_____
City/State/Zip: _____	Atlanta, GA 30329-4027	_____
Phone #: _____	MPiR Unit	_____
Fax #: _____	Bldg. 23, Room 8/470	_____
	Mailstop H23-8	_____
	Phone 404-639-3669	_____

Shipment Information:

Blood Samples
 Other (please describe): _____

Sample Information:

Sample Volume (L): 0.900 Associated Infectious Agent(s) Serum

Dry Ice Wet Ice Other (please describe): _____

Shipment Confirmation:

Requisition Forms in box? Yes No N/A

External Carrier Tracking # _____ Ref: COVID TS Date: 07May20 SHIPPING: 82.96_

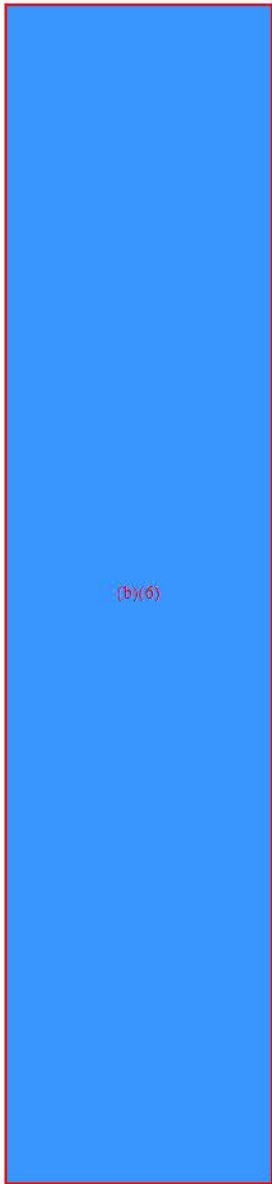
Completed by (Initials/Date) (b)(6) Wgt: 15.00 LBS SPECIAL: 10.00

DV: 0.00 HANDLING: 0.00 TOTAL: 92.96_

Svcs: FIRST OVERNIGHT ICE *PA
TRCK: 1810 8948 7600

Shipment Confirmation (Completed by Scientific Support Office Staff Only):

Email Fax Notification of Shipment Sent By: _____



(b)(6)

2020 RED CROSS SARS2 SEROSURVEY
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2020 RED CROSS SARS2 SEROSURVEY

Prepared By/Date:

(b)(6)

Reviewed By/Date:

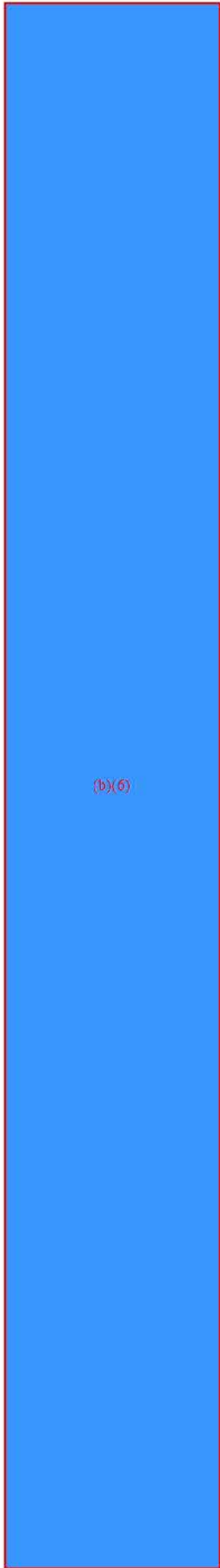
(b)(6)

Additional ARC aliquots for microneuts

obs Original Submitter
Patient ID



E	Result	A
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJKD6
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL3UI
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJKFV
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJM00
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLGO
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLTB
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLK2
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJKKC
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLJH
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL450
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLUJ
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTQM
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTKD
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKU7J
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKU6N
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTWB
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKU5J
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTTV
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9FM
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9JI
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9I8
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTA
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJX3E
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJWHN
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLO9
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQK6BC
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJUWB
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9SH
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL34V
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9BZ
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9VH
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTP2
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL90T
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9F4
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9D3
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTVJ
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9M4
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9VF
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTWU
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9LJ
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKU47
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9G7



(b)(6)

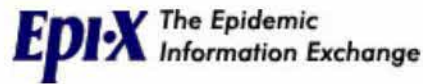
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9RJ
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL3ZR
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL415
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLF6
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9HW
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLJZ
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJPK1
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJYRR
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLHR
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJWLN
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLTV
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJV2I
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJURC
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJV8Z
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJUSQ
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJVA9
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJV6K
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJUNV
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJJXT
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJWKH
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLLO
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJV7P
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJWT1
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL3ZH
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJWNI
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL455
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJLO8
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJQ50
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJWN1
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJJZK
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJPZA
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJWI5
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL4CI
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJVE0
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJQ32
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQJPNQ
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTOF
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTYU
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTV9
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQL9T8
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKU45
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTO3
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKU0S
2020 RED CROSS SARS2 SEROSURVEY	REACTIVE	ZZYQKTWG



2020 RED CROSS SARS2 SEROSURVEY
2020 RED CROSS SARS2 SEROSURVEY
2020 RED CROSS SARS2 SEROSURVEY
2020 RED CROSS SARS2 SEROSURVEY

REACTIVE ZZYQKU7X
REACTIVE ZZYQKU48
REACTIVE ZZYQKTKA
REACTIVE ZZYQL99K

From: EPIXUpdate@cdc.gov
Sent: Fri, 27 Mar 2020 23:39:40 -0400
To: Freeman, Brandi (CDC/DDID/NCIRD/DVD)
Subject: Important: MMWR Early Release: Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility — King County, Washington, March 2020



Check Epi-X for an Important Report

MMWR Early Release: Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility — King County, Washington, March 2020

Following identification of a case of coronavirus disease 2019 (COVID-19) in a health care worker, 76 of 82 residents of an SNF were tested for SARS-CoV-2; 23 (30.3%) had positive test results, approximately half of whom were asymptomatic or presymptomatic on the day of testing. The full report is available at <https://tinyurl.com/s6up9o4>.

<https://epix2.cdc.gov/v2/Reports/Display.aspx?id=103170>

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EpiXEditor@cdc.gov

(877) 862-2392 (toll free within the United States)

+1-770-488-7100 (If you cannot use the toll free number above, please call the CDC Emergency Operations Center and ask to speak to the *Epi-X* editor on call.)

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From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Tue, 14 Apr 2020 19:37:21 +0000
Subject: MPIR 4401 Revision 2 ELISA for Detection of SARS-CoV-2 Antigen-Specific IgA, IgG, and IgM.docx

(b)(5)

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Wed, 15 Apr 2020 14:44:28 +0000
To: Desai, Rita (CDC/DDID/NCIRD/DBD)
Subject: MPIR 4402 Rev 2 SARS-CoV-2 Specific ELISA Process Worksheet.docx

Done.



(b)(5)

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Tue, 9 Jun 2020 16:19:42 +0000
To: Li, Han (CDC/OID/NCIRD)
Subject: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer
Using 10X PBS
Attachments: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer
Using 10X PBS.docx

(b)(3)

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Tue, 9 Jun 2020 16:18:38 +0000
To: Li, Han (CDC/OID/NCIRD)
Subject: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer
Using 10X PBS
Attachments: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer
Using 10X PBS.docx

Han,
This is my version.

(b)(5)

Thanks
Vera

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Tue, 28 Apr 2020 13:46:49 +0000
To: Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD)
Cc: Desai, Rita (CDC/DDID/NCIRD/DBD)
Subject: MPIR 4423 Rev 1 Confirmatory Testing SARS-CoV-2 Specific ELISA Master Plate Sheet.docx

(b)(5)

(b)(5)

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Tue, 5 May 2020 13:42:57 +0000
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Cc: Jia, Lily Tao (CDC/DDID/NCIRD/DBD); Ategbale, Muyiwa (CDC/DDID/NCIRD/DBD)
(CTR)
Subject: MPIR 4423 Rev 1 Confirmatory Testing SARS-CoV-2 Specific ELISA Master Plate Sheet
Attachments: MPIR 4423 Rev 1 Confirmatory Testing SARS-CoV-2 Specific ELISA Master Plate Sheet.docx

Jarad,

(b)(5)

Thanks
Vera

From: Desai, Rita (CDC/DDID/NCIRD/DBD)
Sent: Thu, 16 Apr 2020 17:59:20 +0000
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Subject: MPIR-4405 Analysis of SARS-CoV-2 Specific ELISA Results Using SAS

Hi Jarad,

(b)(5)

Thank you!

Rita

Rita Desai, CMQ/OE, CQA (ASQ)
QA Team Lead, MPIR Laboratory
DDID/NCIRD/DBD/MVPDB
Centers for Disease Control and Prevention
Phone: 404-639-3887
Mobile: (b)(6)
Email: RDesai@cdc.gov
Telework Day: Wednesday



From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT)
Sent: Tue, 5 May 2020 05:00:20 +0000
To: Stramer, Susan;Dodd, Roger;Grimm, Kacie E.;Saa, Paula;Helfand, Rita (CDC/DDID/NCEZID/OD);Gerber, Susan I. (CDC/DDID/NCIRD/DVD);Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP);Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR);Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE);Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP);Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD);Thornburg, Natalie (CDC/DDID/NCIRD/DVD);Schiffer, Jarad (CDC/DDID/NCIRD/DBD);Fry, Alicia (CDC/DDID/NCIRD/ID);Hall, Aron (CDC/DDID/NCIRD/DVD);Havers, Fiona (CDC/DDID/NCIRD/DBD);Reed, Carrie (CDC/DDID/NCIRD/ID);Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID)
Subject: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens
Attachments: 05.04.20 American Red Cross specimens SARS-CoV-2 serology call notes_final.docx

All,

Thank you for a very productive call today. Please find attached notes from today's meeting. Please note that I did not include specific results in the notes as results are still preliminary and awaiting further confirmatory tests.

As discussed, the next steps for SARS-CoV-2 seroprevalence study of ARC blood donation specimens are as follows:

1. Confirmatory testing of screened reactive specimens collected during December–January to be completed in Natalie's lab. Natalie to send ARC results of confirmed reactive specimens.
2. Neutralization antibody testing to be performed by early next week on confirmed reactive specimens collected during December–January. Natalie to send ARC results of neutralization testing. Natalie will also send ID numbers to ARC to request additional aliquots needed for further neutralization testing.
3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
4. Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.
5. ARC sera already received from CA, OR, WA from March to undergo screening in Jarad's lab followed by confirmation in Natalie's lab.
6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,
Monica

Monica E Patton, MD
CDR, US Public Health Service
Burden and Severity Team, Epidemiology Task Force
2019 Novel Coronavirus Response

Centers for Disease Control and Prevention (CDC)

Mobile: (b)(6) WhatsApp: (b)(6)

gnh9@cdc.gov

05.04.20 Notes from call to discuss American Red Cross specimens sent to CDC for SARS-CoV-2 antibody testing

Participants:

American Red Cross: Susan Stramer, Executive Scientific Officer; Roger Dodd; Kacie Grimm; Paula Saa
CDC: Division of Healthcare Quality Promotion – Rita Helfand, Senior Advisor for Science, NCEZID; Sridhar Basavaraju, Director, Office of Blood, Organ and Other Tissue Safety; Mathew Sapiano, Statistician; Division of Viral Diseases – Sue Gerber, Branch Chief, Respiratory Viruses Branch; Lab Task Force – Jeff Johnson, co-Lead; Natalie Thornburg, Team Lead, Respiratory Viruses Immunology Team; Jarad Schiffer, MPIR Laboratory Chief; Sathesh Panayampalli, Serology Studies Coordinator; Epi Task Force – Aron Hall, co-Lead; Alicia Fry, co-Lead, Lisa Grohskopf, Deputy Lead; Burden and Severity Team - Carrie Reed (Lead); Fiona Havers; Monica Patton

All results/information are provisional and confidential

Laboratory methods/Assays: Natalie sent pre-print manuscript to collaborators describing the ELISA (<https://www.biorxiv.org/content/10.1101/2020.04.24.057323v2>). ELISA uses pan-Ig specific to spike protein, specificity 99.3%, sensitivity 96%. Natalie's ELISA does a background correction step. MPIR lab (Jarad) doing high throughput at 1:100 dilution with no background wells – lose specificity but gain sensitivity. Time required for high throughput is 8-9x less. Algorithm – prescreened using positive coated antigen well at 1:100 dilution. Screened positives undergo confirmatory testing in Natalie's lab which tests two dilutions (1:100, 1:400 to make sure decrease between the two) with background correction.

Haven't done direct head to head comparison of assays in Natalie's lab but doing comparison study with NCI for FDA who is comparing point of care/solid state/kits – developing robust PT panel to test all the assays. Sinai developed receptor binding domain (RBD) assay that works well with two-step process – screen with RBD and confirm with full spike domain. May see background with RBD due to HIV. Have tested small amount of sera with HIV and haven't seen that background with CDC assay. CDC assay more sensitive than Labcorp on same small specimen set. CDC also running samples on Ortho in CLIA lab in blinded fashion which found that Ortho had 99% specificity, 88-92% sensitivity because it's S1 only (not full spike).

ARC specimens: ARC would like to use part of its repository to use more robust comparison amongst the assays. Not to be sample set for validation but early sample set to assess early seroprevalence in the US. CDC would be interested in assisting if there is interest in doing deeper dive into specific areas.

Progress: Screening in high throughput lab: as of Friday, tested 7199 samples. Ran residual specimens from Zika resulting in specificity 98.5%, sensitivity >99%. Confirmatory testing of screened positives largely completed in Natalie's lab. Statistician looking at additional preliminary granularity on confirmed reactive specimens. Trying to analyze by original region in which they were collected which correlate to dates. Believe that screening has been completed for all early Dec/Jan specimens. Specimens from mid-March are in the queue to be screened in Jarad's lab – have not been tested yet.

Limitations: Can't say with certainty that reactivity of some specimens not due to common coronavirus. Tested small amount of coronavirus and didn't have significant coronavirus cross reactivity. However, not many common coronavirus available to test.

Confirmatory testing: Must be very sure of results if going to publish. Will perform neutralization starting tomorrow on confirmed reactives. Only have 50% of initial 50 microliters remaining; typically need 32 microliters and start at 1:20. Due to smaller volumes, will start at 1:40. Will be 5-day assay followed by time for drying. May have results early next week. Using WA isolate live virus from very 1st US case on Jan 20. Natalie will send list of confirmed reactive specimens to ARC. ARC can provide additional 50 microliters for neutralization antibody

confirmatory testing if necessary – would require Natalie to send specimen ID of samples that require additional volume.

Specimen selection: Convenience sample. ARC asked for all otherwise non-reactive residual samples available from specific regions and specific dates. May have selected specific counties for regions 4 & 18 (New England and Michigan). ARC can work with regions to provide CDC with more information on blood drives (mobile, fixed, locations). Matt/Kacie -will email offline to nail down specifics on donation demographics/locations.

International travel and blood donation: SARS-CoV-2 risk based travel deferrals started in February. No existing travel deferrals from China when collected December–January specimens unless travelers had traveled to malaria areas in China.

Additional testing: ARC has >30,000 archived plasma specimens available in repository from Jan 9–end March from the same regions that had sera and additional regions (MA, IL, MO, MN, IA, MI, KY, IN, IA, WI, CT, RI, OK, TX, AR, MO, WA, OR). Could glean important information if compare plasma samples from same regions where have sera from earlier time period – particularly if see increases in proportion that are reactive over time. Currently CDC laboratory testing is at max capacity, but lab TF is coordinating serosurveys across the agency and can assess when there may be bandwidth for testing remaining plasma specimens. CDC laboratory workload likely to decrease if Quest/Labcorp comes online. CDC would like to test contemporary comparator from population unlikely to have circulating coronavirus. ARC can send CDC the Ozark (AR/MO) plasma samples. ARC also to send 575 plasma samples from West Coast (Portland) from March to investigate change in reactivity as compared to December.

Dissemination: Getting results out to public will be important once confirmed.

Nucleic acid testing on reactivities: Likely not possible; unlikely to have residual virus that is amplifiable.

Next steps:

- 1) Confirmatory testing of screened reactive specimens collected during December–January to be completed in Natalie’s lab. Natalie to send ARC results of confirmed reactive specimens.
- 2) Neutralization antibody testing to be performed by early next week on confirmed reactive specimens collected during December–January. Natalie to send ARC results of neutralization testing. Natalie will also send ID numbers to ARC to request additional aliquots needed for further neutralization testing.
- 3) ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
- 4) Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.
- 5) ARC sera already received from CA, OR, WA from March to undergo screening in Jarad’s lab followed by confirmation in Natalie’s lab.
- 6) Set up another phone call to discuss results when available.

From: Drobeniuc, Jan (CDC/DDID/NCHHSTP/DVH)
Sent: Tue, 28 Apr 2020 12:09:07 +0000
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Subject: Re: CDC to survey for coronavirus antibodies in DeKalb, Fulton

Got it.

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From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, April 28, 2020 8:03:34 AM
To: Drobeniuc, Jan (CDC/DDID/NCHHSTP/DVH) <jqd6@cdc.gov>
Subject: Re: CDC to survey for coronavirus antibodies in DeKalb, Fulton

(b)(5)

Thank you,
Jeff

From: Drobeniuc, Jan (CDC/DDID/NCHHSTP/DVH) <jqd6@cdc.gov>
Sent: Tuesday, April 28, 2020 8:00:51 AM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: CDC to survey for coronavirus antibodies in DeKalb, Fulton

Jeff,

(b)(5)

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Monday, April 27, 2020 10:41 PM
To: Drobeniuc, Jan (CDC/DDID/NCHHSTP/DVH) <jqd6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Subject: Fwd: CDC to survey for coronavirus antibodies in DeKalb, Fulton

Welcome to the response Jan. Here's your project!

(b)(6)

Jeff

From: Drobeniuc, Jan (CDC/DDID/NCHHSTP/DVH)
Sent: Tue, 28 Apr 2020 10:23:29 +0000
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD); Thornburg, Natalie (CDC/DDID/NCIRD/DVD); Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Subject: Re: CDC to survey for coronavirus antibodies in DeKalb, Fulton

Thank you for sharing

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From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Monday, April 27, 2020 10:41:00 PM
To: Drobeniuc, Jan (CDC/DDID/NCHHSTP/DVH) <jqd6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Subject: Fwd: CDC to survey for coronavirus antibodies in DeKalb, Fulton

Welcome to the response Jan. Here's your project!

(b)(6)

Jeff

From: Harcourt, Jennifer (CDC/DDID/NCIRD/DVD)
Sent: Mon, 8 Jun 2020 18:04:49 +0000
To: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR);Mills, Lisa (CDC/DDID/NCIRD/DVD);Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR);Tamin, Azaibi (CDC/DDID/NCIRD/DVD);Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR);Thornburg, Natalie (CDC/DDID/NCIRD/DVD);Freeman, Brandi (CDC/DDID/NCIRD/DVD);Peret, Teresa (CDC/DDID/NCIRD/DVD);Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR);Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR)
Subject: RE: DART review - SARS-CoV-2 ELISA

(b)(5)

From: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>
Sent: Monday, June 8, 2020 1:57 PM
To: Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mw1@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

Happy to help with this, or future SOPs as needed!

(b)(5)

Best,
Megan

From: Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>
Sent: Monday, June 8, 2020 1:54 PM
To: Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mw1@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

I can assist as well.

Lisa

From: Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>
Sent: Monday, June 8, 2020 1:40 PM
To: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

I can also assist Brandi. Just let me know when.

Thank you,

Stefany Moye
Eagle Global Scientific, LLC
Respiratory Virus Immunology Team (CTR)
CDC/DDID/NCIRD/DVD/Respiratory Viruses Branch
Phone: 404-718-4075
Email: mwx1@cdc.gov

From: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>
Sent: Monday, June 8, 2020 12:39 PM
To: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

We are small like a sport car – always a cheer, nimble and tossable – come what may! ☺

From: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>
Sent: Monday, June 8, 2020 12:37 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange

(CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

Lol

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>

Sent: Monday, June 8, 2020 12:36 PM

To: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

Speak for yourself Azaibi!

From: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>

Sent: Monday, June 8, 2020 12:34 PM

To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

Way to go gang!! The gang seems ready for the new norm 😊

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>

Sent: Monday, June 8, 2020 12:30 PM

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Subject: RE: DART review - SARS-CoV-2 ELISA

(b)(5)

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Subject: RE: DART review - SARS-CoV-2 ELISA

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Best regards,

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Subject: FW: DART review - SARS-CoV-2 ELISA

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Natalie

From: Weldon, William C. (CDC/DDID/NCIRD/DVD) <wiw4@cdc.gov>
Sent: Monday, June 8, 2020 7:46 AM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Cc: Bernstein, Shawnte R. (CDC/DDID/NCIRD/DVD) (CTR) <auk4@cdc.gov>; Marcus, Whitney (CDC/DDID/NCIRD/DVD) (CTR) <ovq9@cdc.gov>
Subject: DART review - SARS-CoV-2 ELISA

Hi Natalie,

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Thanks,

Will

From: Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR)
Sent: Mon, 8 Jun 2020 16:28:46 +0000
To: Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR);Thornburg, Natalie (CDC/DDID/NCIRD/DVD);Freeman, Brandi (CDC/DDID/NCIRD/DVD);Harcourt, Jennifer (CDC/DDID/NCIRD/DVD);Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR);Mills, Lisa (CDC/DDID/NCIRD/DVD);Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR);Peret, Teresa (CDC/DDID/NCIRD/DVD);Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR);Tamin, Azaibi (CDC/DDID/NCIRD/DVD)
Subject: RE: DART review - SARS-CoV-2 ELISA

Since I am running a lots of ELISA, Anything I need to do, please let me know.

From: Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>
Sent: Monday, June 8, 2020 12:27 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

I can coordinate with Brandi on this if required.
Seems a very different exercise.

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Sent: Monday, June 8, 2020 12:25 PM
To: Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
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(b)(5)

Brandi is the official QMS manager. Long live her reign.

From: Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>
Sent: Monday, June 8, 2020 12:24 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Harcourt, Jennifer

(CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

Hi Natalie,

I'd be more than happy to help.

Best,
Brandi

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Subject: DART review - SARS-CoV-2 ELISA

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Thanks,

Will

From: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR)
Sent: Mon, 8 Jun 2020 20:50:54 +0000
To: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR)
Subject: RE: DART review - SARS-CoV-2 ELISA

Turns out it wasn't on! 😊

Best,
Megan

From: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>
Sent: Monday, June 8, 2020 2:48 PM
To: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

Hi Megan,

Can you turn off the small water bath in 6-218 for me? I think I left it on.

Best Regards,

Sandra Lester

From: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>
Sent: Monday, June 8, 2020 1:57 PM
To: Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwX1@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

Happy to help with this, or future SOPs as needed!

(b)(5)

Best,
Megan

From: Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>
Sent: Monday, June 8, 2020 1:54 PM
To: Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwX1@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR)

<hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

I can assist as well.

Lisa

From: Moyer, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>

Sent: Monday, June 8, 2020 1:40 PM

To: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

I can also assist Brandi. Just let me know when.

Thank you,

Stefany Moyer

Eagle Global Scientific, LLC

Respiratory Virus Immunology Team (CTR)

CDC/DDID/NCIRD/DVD/Respiratory Viruses Branch

Phone: 404-718-4075

Email: mwx1@cdc.gov

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We are small like a sport car – always a cheer, nimble and tossable – come what may! ☺

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Lol

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Subject: DART review - SARS-CoV-2 ELISA

Hi Natalie,

Sorry its taken so long to get this review back to you. Attached is a review form summarizing some of the elements that DART is reviewing SOPs and validation on and the SOP with comments from reviewers.

Happy to setup a meeting to discuss the comments with some of the reviewers.

Thanks,

Will

From: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR)
Sent: Mon, 8 Jun 2020 18:50:39 +0000
To: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR)
Subject: RE: DART review - SARS-CoV-2 ELISA

Thank you,

Best Regards,

Sandra Lester

From: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>
Sent: Monday, June 8, 2020 2:49 PM
To: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

No problem – will do!

Best,
Megan

From: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>
Sent: Monday, June 8, 2020 2:48 PM
To: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

Hi Megan,

Can you turn off the small water bath in 6-218 for me? I think I left it on.

Best Regards,

Sandra Lester

From: Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>
Sent: Monday, June 8, 2020 1:57 PM
To: Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moyer, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

Happy to help with this, or future SOPs as needed!

(b)(5)

Best,
Megan

From: Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>
Sent: Monday, June 8, 2020 1:54 PM
To: Moyer, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

I can assist as well.

Lisa

From: Moyer, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>
Sent: Monday, June 8, 2020 1:40 PM
To: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
Subject: RE: DART review - SARS-CoV-2 ELISA

I can also assist Brandi. Just let me know when.

Thank you,

Stefany Moyer
Eagle Global Scientific, LLC
Respiratory Virus Immunology Team (CTR)
CDC/DDID/NCIRD/DVD/Respiratory Viruses Branch
Phone: 404-718-4075
Email: mwx1@cdc.gov

From: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>
Sent: Monday, June 8, 2020 12:39 PM
To: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Thornburg, Natalie

(CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

We are small like a sport car – always a cheer, nimble and tossable – come what may! ☺

From: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>

Sent: Monday, June 8, 2020 12:37 PM

To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

Lol

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>

Sent: Monday, June 8, 2020 12:36 PM

To: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

Speak for yourself Azaibi!

From: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>

Sent: Monday, June 8, 2020 12:34 PM

To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

Way to go gang!! The gang seems ready for the new norm ☺

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>

Sent: Monday, June 8, 2020 12:30 PM

To: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moyer, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

(b)(5)

From: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>

Sent: Monday, June 8, 2020 12:29 PM

To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moyer, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: RE: DART review - SARS-CoV-2 ELISA

I can also help Brandi if you need any assistance. Just let me know.

Best regards,

Sandra Lester

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>

Sent: Monday, June 8, 2020 12:19 PM

To: Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moyer, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mwx1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

Subject: FW: DART review - SARS-CoV-2 ELISA

All,

I'm CCing these for your awareness.

We are now being required to have some of our SOPs undergo “review”, which is pretty extensive. I had been handling QMS myself since Hyatt left, but I think I’m going to have to have one of you take that baton as QMS manager, lest things get constantly stalled with me.

Can anyone step up to the plate as a volunteer? You’re first job will to address some of the comments in the review of our ELISA SOP, and we can talk through that before you do so.

Natalie

From: Weldon, William C. (CDC/DDID/NCIRD/DVD) <wiw4@cdc.gov>

Sent: Monday, June 8, 2020 7:46 AM

To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>

Cc: Bernstein, Shawnte R. (CDC/DDID/NCIRD/DVD) (CTR) <auk4@cdc.gov>; Marcus, Whitney (CDC/DDID/NCIRD/DVD) (CTR) <ovq9@cdc.gov>

Subject: DART review - SARS-CoV-2 ELISA

Hi Natalie,

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Thanks,

Will

From: Tamin, Azaibi (CDC/DDID/NCIRD/DVD)
Sent: Mon, 8 Jun 2020 16:36:21 +0000
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD);Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR);Freeman, Brandi (CDC/DDID/NCIRD/DVD);Harcourt, Jennifer (CDC/DDID/NCIRD/DVD);Mills, Lisa (CDC/DDID/NCIRD/DVD);Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR);Peret, Teresa (CDC/DDID/NCIRD/DVD);Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR);Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR);Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR)
Subject: RE: DART review - SARS-CoV-2 ELISA

😊😊😊

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From: Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>
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To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mw1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Zhang, Yange (CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>
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From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Sent: Monday, June 8, 2020 12:30 PM
To: Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR) <hyz5@cdc.gov>; Freeman, Brandi (CDC/DDID/NCIRD/DVD) <odg5@cdc.gov>; Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>; Mills, Lisa (CDC/DDID/NCIRD/DVD) <pmf2@cdc.gov>; Moye, Stefany (CDC/DDID/NCIRD/DVD) (CTR) <mw1@cdc.gov>; Peret, Teresa (CDC/DDID/NCIRD/DVD) <tbp0@cdc.gov>; Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR) <mkv6@cdc.gov>; Stumpf, Megan (CDC/DDID/NCIRD/DVD) (CTR) <osu0@cdc.gov>; Tamin, Azaibi (CDC/DDID/NCIRD/DVD) <axt4@cdc.gov>; Zhang, Yange

(CDC/DDID/NCIRD/DVD) (CTR) <hvs1@cdc.gov>

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(b)(5)

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Natalie

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Sent: Monday, June 8, 2020 7:46 AM

To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>

Cc: Bernstein, Shawnte R. (CDC/DDID/NCIRD/DVD) (CTR) <auk4@cdc.gov>; Marcus, Whitney (CDC/DDID/NCIRD/DVD) (CTR) <ovq9@cdc.gov>

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Happy to setup a meeting to discuss the comments with some of the reviewers.

Thanks,

Will

From: Kuehl, Debra B. (CDC/DDID/NCIRD/OD)
Sent: Sat, 20 Jun 2020 17:49:30 +0000
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD);Muehlenbachs, Atis (CDC/DDID/OD);Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP)
Subject: RE: DART_EXT 0001 Rev 1 ELISA for Detection of SARS-CoV-2 Antigen-Specific IgA, IgG, and IgM.docx

Thanks Jarad! I'm just catching up on e-mails today.

(b)(5)

(b)(5)

Thanks again,
Debbie K.

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Sent: Thursday, June 18, 2020 2:56 PM
To: Kuehl, Debra B. (CDC/DDID/NCIRD/OD) <dpk6@cdc.gov>; Muehlenbachs, Atis (CDC/DDID/OD) <vkd6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>
Subject: DART_EXT 0001 Rev 1 ELISA for Detection of SARS-CoV-2 Antigen-Specific IgA, IgG, and IgM.docx

Hi all –

(b)(5)

Thanks,

Jarad

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Sent: Tue, 31 Mar 2020 16:04:45 +0000
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Subject: Re: DRAFT SARS-CoV-2 spike ELISA_JS

(b)(5)

[Get Outlook for iOS](#)

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Sent: Tuesday, March 31, 2020 11:48:41 AM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Subject: RE: DRAFT SARS-CoV-2 spike ELISA_JS

(b)(5)

(b)(5)

Jarad

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Sent: Sunday, March 29, 2020 8:50 AM
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Subject: Re: DRAFT SARS-CoV-2 spike ELISA_JS

(b)(5)

Get [Outlook for iOS](#)

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Sent: Sunday, March 29, 2020 7:07:42 AM
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Subject: RE: DRAFT SARS-CoV-2 spike ELISA_JS

(b)(5)

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Sent: Saturday, March 28, 2020 2:40 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Subject: DRAFT SARS-CoV-2 spike ELISA_JS

Hi Natalie –

(b)(5)

Thanks,

Jarad

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Sent: Mon, 30 Mar 2020 00:01:33 +0000
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Subject: RE: DRAFT SARS-CoV-2 spike ELISA_JS
Attachments: DRAFT SARS-CoV-2 spike ELISA_JS_NJT.docx, DRAFT SARS-CoV-2 spike ELISA_clean.docx

(b)(5)

Thanks,

Jarad

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Sent: Sunday, March 29, 2020 7:08 AM
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Subject: RE: DRAFT SARS-CoV-2 spike ELISA_JS

(b)(5)

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Sent: Saturday, March 28, 2020 2:40 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Subject: DRAFT SARS-CoV-2 spike ELISA_JS

Hi Natalie –

(b)(5)

Thanks,

Jarad

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Sent: Sun, 29 Mar 2020 11:07:42 +0000
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Subject: RE: DRAFT SARS-CoV-2 spike ELISA_JS
Attachments: DRAFT SARS-CoV-2 spike ELISA_JS_NJT.docx

(b)(5)

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Sent: Saturday, March 28, 2020 2:40 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Subject: DRAFT SARS-CoV-2 spike ELISA_JS

Hi Natalie –

(b)(5)

Thanks,

Jarad

From: Quinn, Conrad (CDC/DDPHSS/OLSS/OLS)
Sent: Wed, 11 Mar 2020 13:34:20 +0000
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD)
Subject: RE: More anti-Sars-CoV-2 antibodies for free trial

Stay strong.

Conrad.
==

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Sent: Wednesday, March 11, 2020 9:31 AM
To: Quinn, Conrad (CDC/DDPHSS/OLSS/OLS) <caq7@cdc.gov>
Subject: Re: More anti-Sars-CoV-2 antibodies for free trial

I am okay,

(b)(6)

(b)(6)

Jarad

Sent from my cell, please excuse any spelling errors.

J

From: Quinn, Conrad (CDC/DDPHSS/OLSS/OLS) <caq7@cdc.gov>
Sent: Wednesday, March 11, 2020 9:28:47 AM
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Subject: RE: More anti-Sars-CoV-2 antibodies for free trial

Thx.
I hope all is well with you.

Conrad.
==

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Sent: Wednesday, March 11, 2020 9:27 AM
To: Quinn, Conrad (CDC/DDPHSS/OLSS/OLS) <caq7@cdc.gov>
Subject: Re: More anti-Sars-CoV-2 antibodies for free trial

(b)(5)

Jarad

Sent from my cell, please excuse any spelling errors.

J

From: Quinn, Conrad (CDC/DDPHSS/OLSS/OLS) <cag7@cdc.gov>

Sent: Wednesday, March 11, 2020 9:25:29 AM

To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>

Subject: RE: More anti-Sars-CoV-2 antibodies for free trial

(b)(5)

Conrad.

==

From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>

Sent: Wednesday, March 11, 2020 9:24 AM

To: Quinn, Conrad (CDC/DDPHSS/OLSS/OLS) <cag7@cdc.gov>

Subject: Re: More anti-Sars-CoV-2 antibodies for free trial

Hi Conrad-

(b)(5)

Jarad

Sent from my cell, please excuse any spelling errors.

J

From: Quinn, Conrad (CDC/DDPHSS/OLSS/OLS) <cag7@cdc.gov>

Sent: Wednesday, March 11, 2020 9:05:13 AM

To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>

Subject: FW: More anti-Sars-CoV-2 antibodies for free trial

(b)(5)

Conrad.

==

From: service@bio.sanyoubio.com <service@bio.sanyoubio.com> **On Behalf Of** sanyoubio

Sent: Wednesday, March 11, 2020 9:02 AM

To: Quinn, Conrad (CDC/DDPHSS/OLSS/OLS) <caq7@cdc.gov>

Subject: More anti-Sars-CoV-2 antibodies for free trial

Dear Professor,

More and more researchers have entered the arena to study and develop treatment for COVID-19 as it has spread to more and more countries. As a company focused on the development of innovative antibody drugs, Sanyou Biopharmaceuticals has continuously expanded its protein and monoclonal antibodies portfolios to empower worldwide researchers. We have obtained anti-virus monoclonal antibodies with neutralizing activity within just 16 days and now we have more antibodies against N protein and human ACE2 protein as well. Now we are offering aliquots of these antibodies for free trial as well as taking inquiries about ordering these products.

Validated mAbs free sample campaign:

Our list of SARS-CoV-2-related mAbs has rigorous quality control and activity verification. We are honored to offer 50 µl free samples of each antibody for your breakthrough research. You can choose the ones you need and send a request email to service@sanyoubio.com. We will ship the packages according to the application sequence.

Product ID	Product name	Species	Subtype	Expression system
------------	--------------	---------	---------	-------------------

AHA001	Anti-Spike-RBD mAb	Human	Human-IgG1	ExpiCHO
AHA003	Anti-Spike-RBD mAb	Human	Human-IgG1	ExpiCHO
AHA006	Anti-N-protein mAb	Human	Human-IgG1	ExpiCHO
AHA007	Anti-ACE2 mAb	Human	Human-IgG1	ExpiCHO
ANA001	Anti-Spike-RBD single domain mAb	llama	Fc(IgG)	ExpiCHO

Note: AHA001 and AHA003 are validated paired antibodies against different epitopes

Event rules

1. We will deliver goods in order according to the application order. The arrival time varies depending on the regional express delivery.
2. In order to ensure that more parties can experience the products as soon as possible, multiple participants from the same research group will receive only one pack; the participants under the same tutor or the same company is considered as from the same research group.
3. The right of final interpretation of this event is reserved by Sanyou Biopharmaceuticals.

Product ID	Product name	Species	Subtype	Expression system
PNA001	Spike S1	SARS-CoV-2	Fc	Expi293
PNA002	Spike S1	SARS-CoV-2	His	Expi293
PNA003	Spike RBD	SARS-CoV-2	Fc	Expi293
PNA004	Spike RBD	SARS-CoV-2	His	Expi293
PNA005	Nucleocapsid Protein	SARS-CoV-2	His	E.coli
PHA001	ACE2 protein	human	Fc	Expi293
PHA002	ACE2 protein	human	His	Expi293
PMA001	ACE2 protein	mouse	Fc	Expi293
PMA002	ACE2 protein	mouse	His	Expi293

AHA001	Anti-Spike-RBD mAb	Human	Human-IgG1	ExpiCHO
AHA003	Anti-Spike-RBD mAb	Human	Human-IgG1	ExpiCHO
AHA004	Anti-Spike-RBD mAb	Human	Human-IgG1	ExpiCHO
AHA005	Anti-Spike-RBD mAb	Human	Human-IgM	ExpiCHO
ANA001	Anti-Spike-RBD single domain mAb	llama	Fc(IgG)	ExpiCHO
ANA002	Anti-Spike-RBD single domain mAb	llama	Fc(IgG)	ExpiCHO
ANA003	Anti-Spike-RBD single domain mAb	llama	Fc(IgG)	ExpiCHO
ANA004	Anti-Spike-RBD single domain mAb	llama	Fc(IgG)	ExpiCHO

AHA006	Anti-N-protein mAb	Human	Human-IgG1	ExpiCHO
AHA009	Anti-N-protein mAb	Human	Human-IgG1	ExpiCHO
AHA010	Anti-N-protein mAb	Human	Human-IgG1	ExpiCHO
AHA011	Anti-N-protein mAb	Human	Human-IgG1	ExpiCHO
AHA007	Anti-ACE2 mAb	Human	Human-IgG1	ExpiCHO
AHA012	Anti-ACE2 mAb	Human	Human-IgG1	ExpiCHO

If you have any question about inquiring, ordering or project progress, please send an email to service@genecore.com or call the toll-free customer service phone: +86-21-33681627. We will reply to you within 24 hours.

★ S1 protein was expressed using the Expi293 expression system with more than 90% yield. It shows excellent affinity to S1 protein or Anti-S1-protein mAb and shows excellent affinity to Vero E6 cell surface.

★ Spike-RBD protein was expressed using Expi293 expression system. It shows excellent affinity to ACE2.

★ Anti-Spike-RBD human mAb was expressed using ExpiCHO expression system to detect nCoV Spike-RBD protein.

★ DAS-ELISA test results show that there are two groups of Anti-Spike-RBD human mAbs with different epitopes.

★ Anti-Spike-RBD single domain mAb was expressed using ExpiCHO expression system.

★ Both human and murine ACE2 proteins were expressed using the Expi293 system to detect 2019-nCoV S1 protein and anti-ACE2 antibody.

★ Anti-ACE2 antibody was expressed using ExpiCHO expression system. It shows a prominent affinity to Vero E6 cell surface ACE2.

You can click the following link for more details:

<https://www.sanyoubio.com/EN/2019-nCoV.php>

More service:

Service Type	Raw Material Preparation	Lead Antibody Generation	Antibody Engineering
Service Name	<ul style="list-style-type: none"> ▶ Protein ▶ Antibody expression ▶ Cell line 	<ul style="list-style-type: none"> ▶ Mouse mAbs ▶ Human mAbs ▶ Single Domain mAbs 	<ul style="list-style-type: none"> ▶ Humanization ▶ Affinity maturation
Service	Functional Screening	Animal Model Screening	Cell Line

Type			Construction
Service Name	<ul style="list-style-type: none"> ▶ Functional assay ▶ Systemic In Vitro ▶ Physicochemical analysis 	<ul style="list-style-type: none"> ▶ Animal models 	<ul style="list-style-type: none"> ▶ Cell line development

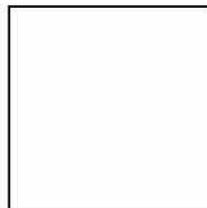
You could click on the service name in the table and get detailed information.

Sanyou Biopharmaceuticals Co., Ltd.

Website : www.sanyoubio.com

Email : service@sanyoubio.com

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▪

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Thu, 11 Jun 2020 18:27:59 +0000
To: Li, Han (CDC/DDID/NCIRD/DBD)
Subject: RE: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS

Ok, thanks Han,
I will do it shortly.
Vera

From: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Sent: Thursday, June 11, 2020 2:26 PM
To: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Subject: RE: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS

Hi Vera,
I missed this email. You may send the new version to everyone for review.
Thanks,
Han

From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Tuesday, June 9, 2020 1:11 PM
To: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Subject: RE: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS

Thank you Han,
Will you send the new version of the form to everyone to review or you want me to do it?
Thanks
Vera

From: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Sent: Tuesday, June 9, 2020 1:06 PM
To: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Subject: RE: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS

Vera,

(b)(5)

Thanks,
Han

From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Tuesday, June 9, 2020 12:19 PM

To: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>

Subject: MPIR 4404 Rev 1 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS

Han,

This is my version.

[Redacted content: (b)(5)]

Thanks

Vera

From: Li, Han (CDC/DDID/NCIRD/DBD)
Sent: Wed, 24 Jun 2020 16:04:43 +0000
To: Semenova, Vera (CDC/DDID/NCIRD/DBD);Desai, Rita (CDC/DDID/NCIRD/DBD);Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR)
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer for Screening Test Using 10X PBS_24_June 2020.docx

(b)(5)

Thanks,
Han

-----Original Message-----

From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Wednesday, June 24, 2020 11:54 AM
To: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>; Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Subject: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer for Screening Test Using 10X PBS_24_June 2020.docx

(b)(5)

Thanks
Vera

From: Li, Han (CDC/DDID/NCIRD/DBD)
Sent: Wed, 17 Jun 2020 17:40:10 +0000
To: Semenova, Vera (CDC/DDID/NCIRD/DBD); Desai, Rita (CDC/DDID/NCIRD/DBD); Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR)
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

(b)(5)

Thanks,
Han

From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Wednesday, June 17, 2020 1:22 PM
To: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>; Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

(b)(5)

From: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Sent: Wednesday, June 17, 2020 1:16 PM
To: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Thank you Rita.

(b)(5)

Thanks,
Han

From: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Sent: Wednesday, June 17, 2020 1:02 PM

To: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>
Cc: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Hi Vera and Han,



Thank you,

Rita

From: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Sent: Monday, June 15, 2020 8:38 PM
To: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>
Cc: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Subject: Re: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Hi Vera,

Thank you, I will review.

Thanks,

Rita

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From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Monday, June 15, 2020 8:37:57 AM
To: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>
Cc: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Subject: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Good morning,

(b)(5)

Thanks,

Vera

(b)(5)

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Wed, 17 Jun 2020 17:06:49 +0000
To: Desai, Rita (CDC/DDID/NCIRD/DBD); Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR)
Cc: Li, Han (CDC/DDID/NCIRD/DBD)
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

(b)(5)

Thanks
Vera

From: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Sent: Wednesday, June 17, 2020 1:02 PM
To: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>
Cc: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Hi Vera and Han,

(b)(5)

Thank you,

Rita

From: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Sent: Monday, June 15, 2020 8:38 PM
To: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>
Cc: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Subject: Re: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Hi Vera,

Thank you, I will review.

Thanks,

Rita

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From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Monday, June 15, 2020 8:37:57 AM
To: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>
Cc: Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>
Subject: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Good morning,

(b)(5)

Thanks,
Vera

(b)(5)

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Thu, 11 Jun 2020 18:43:17 +0000
To: Desai, Rita (CDC/DDID/NCIRD/DBD)
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

You are welcome!

-----Original Message-----

From: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Sent: Thursday, June 11, 2020 2:42 PM
To: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Subject: RE: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Thank you Vera for updating!

-----Original Message-----

From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Thursday, June 11, 2020 2:41 PM
To: Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>; Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD) <fky0@cdc.gov>; Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR) <qcs8@cdc.gov>; Boulay, Darbi (CDC/DDID/NCIRD/DBD) <dma7@cdc.gov>; Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR) <axe6@cdc.gov>; David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR) <xxb5@cdc.gov>; Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR) <ycu3@cdc.gov>; Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>; Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>; Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR) <lzq9@cdc.gov>; Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR) <prr1@cdc.gov>; Park, So H. (CDC/DDID/NCIRD/DBD) (CTR) <xxa0@cdc.gov>; PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR) <qct4@cdc.gov>; Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR) <yvm4@cdc.gov>; Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD) <eqs2@cdc.gov>; Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR) <pvl6@cdc.gov>; Zellner, Briana (CDC/DDID/NCIRD/DBD) <qes9@cdc.gov>; Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Subject: MPIR 4404 Rev 2 Preparation of SARS-CoV-2 Specific ELISA Plate Coating Buffer Using 10X PBS.docx

Hi,



Thanks
Vera

From: Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD)
Sent: Thu, 7 May 2020 13:49:05 +0000
To: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Cc: Desai, Rita (CDC/DDID/NCIRD/DBD)
Subject: RE: MPIR 4421 Rev 1 Confirmatory Testing SARS-CoV-2 Specific ELISA.docx

I will do right now.

Pete

-----Original Message-----

From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Thursday, May 7, 2020 9:46 AM
To: Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>
Cc: Desai, Rita (CDC/DDID/NCIRD/DBD) <rdw7@cdc.gov>
Subject: MPIR 4421 Rev 1 Confirmatory Testing SARS-CoV-2 Specific ELISA.docx

Hi Pete,

(b)(5)

Thanks,
Vera

(b)(5)

From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Tue, 28 Apr 2020 14:03:23 +0000
To: Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD)
Subject: RE: MPIR 4423 Rev 1 Confirmatory Testing SARS-CoV-2 Specific ELISA Master Plate Sheet.docx

(b)(5)

-----Original Message-----

From: Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>
Sent: Tuesday, April 28, 2020 9:58 AM
To: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Cc: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Subject: RE: MPIR 4423 Rev 1 Confirmatory Testing SARS-CoV-2 Specific ELISA Master Plate Sheet.docx

Vera,

(b)(5)

Thank you,

Pete

-----Original Message-----

From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Tuesday, April 28, 2020 9:47 AM
To: Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>
Cc: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Subject: MPIR 4423 Rev 1 Confirmatory Testing SARS-CoV-2 Specific ELISA Master Plate Sheet.docx

(b)(5)

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Sent: Tue, 5 May 2020 12:12:32 +0000
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT);Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Subject: Re: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Good morning,

You may have heard the news that France confirmed their first case was at the end of December. So it's already been going around at least to the international hubs by then.

Jeff

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Tuesday, May 5, 2020 1:00:20 AM

To: Stramer, Susan <Susan.Stramer@redcross.org>; Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>

Subject: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

All,

Thank you for a very productive call today. Please find attached notes from today's meeting. Please note that I did not include specific results in the notes as results are still preliminary and awaiting further confirmatory tests.

As discussed, the next steps for SARS-CoV-2 seroprevalence study of ARC blood donation specimens are as follows:

1. Confirmatory testing of screened reactive specimens collected during December–January to be completed in Natalie's lab. Natalie to send ARC results of confirmed reactive specimens.
2. Neutralization antibody testing to be performed by early next week on confirmed reactive specimens collected during December–January. Natalie to send ARC results of neutralization testing. Natalie will also send ID numbers to ARC to request additional aliquots needed for further neutralization testing.
3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
4. Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.

5. ARC sera already received from CA, OR, WA from March to undergo screening in Jarad's lab followed by confirmation in Natalie's lab.
6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,

Monica

Monica E Patton, MD

CDR, US Public Health Service

Burden and Severity Team, Epidemiology Task Force

2019 Novel Coronavirus Response

Centers for Disease Control and Prevention (CDC)

Mobile: (b)(6) /WhatsApp: (b)(6)

gnh9@cdc.gov

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Sent: Tue, 21 Apr 2020 23:31:04 +0000
To: CDC IMS 2019 NCOV Response Lab Task Force; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Cc: Carroll, Darin (CDC/DDID/NCEZID/OD); Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD)
Subject: RE: Question regarding presence of viable SARS-CoV-2 virus in serum

(b)(5)

From: CDC IMS 2019 NCOV Response Lab Task Force <eocevent177@cdc.gov>
Sent: Tuesday, April 21, 2020 6:24 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: Re: Question regarding presence of viable SARS-CoV-2 virus in serum

Hi Natalie,

(b)(5)

Thanks!

Best,

Caitlin

CDC IMS LAB TF

2019 nCoV Response

eocevent177@cdc.gov

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Sent: Tuesday, April 21, 2020 6:20 PM
To: CDC IMS 2019 NCOV Response Lab Task Force <eocevent177@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: Re: Question regarding presence of viable SARS-CoV-2 virus in serum

We have tried to culture from a single pcr+ specimen, but did not recover virus.

Get [Outlook for iOS](#)

From: CDC IMS 2019 NCOV Response Lab Task Force <eocevent177@cdc.gov>
Sent: Tuesday, April 21, 2020 5:40:44 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: Fw: Question regarding presence of viable SARS-CoV-2 virus in serum

Hi Natalie and Jeff,

A WA PHL was inquiring if live virus had ever been found in a serum sample? I can also send them our guidance on specimen handling in the lab for their BSL/PPE questions. Thanks!

Best,

Caitlin

CDC IMS LAB TF

2019 nCoV Response

eocevent177@cdc.gov

From: McLaughlin, Heather (CDC/DDID/NCEZID/DPEI) <yfq4@cdc.gov>
Sent: Tuesday, April 21, 2020 5:37 PM
To: CDC IMS 2019 NCOV Response Lab Task Force <eocevent177@cdc.gov>
Cc: Carlson, Christina (CDC/DDPHSIS/CGH/DPDM) <okq1@cdc.gov>
Subject: Question regarding presence of viable SARS-CoV-2 virus in serum

Good afternoon,

I was part of the Field Team that was deployed to Seattle last month and I was stationed at the WA PHL as a CDC liaison. They had a question (see below) regarding whether viable virus has ever been found in serum samples. They are looking into serological testing options and would like guidance on the biosafety level/PPE requirements for performing this kind of testing.

Thanks very much for any information you may be able to provide on this topic.

Kind Regards,

Heather

Heather McLaughlin, Ph.D.

Research Microbiologist

Deployed Supporting CDC COVID-19 Response

Biodefense Research and Development Laboratory (BDRD)

National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)

Centers for Disease Control and Prevention (CDC)

Tel: (713) 550-4854

Email: yfq4@cdc.gov

From: Ostash, Alla (DOH) <Alla.Ostash@DOH.WA.GOV>

Sent: Tuesday, April 21, 2020 4:55 PM

To: Carlson, Christina (CDC/DDPHSIS/CGH/DPDM) <okq1@cdc.gov>

Cc: McLaughlin, Heather (CDC/DDID/NCEZID/DPEI) <yfq4@cdc.gov>

Subject: Literature regarding COVID presence in Serum

Hi Christina and Heather,

Hoping you both are doing well and are healthy!

We are trying to look into serological testing options and I was wondering – you were so helpful last time 😊 - if you were aware of the literature about infectiousness of the serum.

I found a few articles that had PCR positive results on the small percentage of serum but is there evidence that serum contains viable virus? Most of the serological platforms require open tubes for testing which may warrant enhanced PPE level if there is significant concern for exposure.

Thank you,

Alla Ostash

From: Carlson, Christina (CDC/DDPHSIS/CGH/DPDM) [<mailto:okq1@cdc.gov>]
Sent: Saturday, March 14, 2020 12:04 PM
To: Ostash, Alla (DOH) <Alla.Ostash@DOH.WA.GOV>
Cc: McLaughlin, Heather (CDC/DDID/NCEZID/DPEI) <yfq4@cdc.gov>
Subject: Literature on SARS-CoV-2 persistence on environmental surfaces

Hi Alla,

Please see below for links to relevant publications on SARS-CoV-2 persistence on environmental surfaces:

- <https://www.medrxiv.org/content/10.1101/2020.03.09.20033217v2>
-
- <https://www.ncbi.nlm.nih.gov/pubmed/16914034>
- <https://www.ncbi.nlm.nih.gov/pubmed/26597631>
- <https://www.ncbi.nlm.nih.gov/pubmed/26556276>
- <https://www.ncbi.nlm.nih.gov/pubmed/22312351>
- [https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30046-3/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30046-3/fulltext)
- <https://www.ncbi.nlm.nih.gov/pubmed/?term=human+coronaviruses%3A+insights+into+environmental+resistance+and+its+influence+on+the+development+of+new+antiseptic+strategies>
-
- Happy reading!

- -Christina



[Human coronaviruses: insights into environmental resistance and its influence on the development of new antiseptic strategies. - PubMed - NCBI](#)

Viruses. 2012 Nov 12;4(11):3044-68. doi: 10.3390/v4113044. Research Support, Non-U.S. Gov't; Review

www.ncbi.nlm.nih.gov

[Aerosol and surface stability of HCoV-19 \(SARS-CoV-2\) compared to SARS-CoV-1 - medrxiv.org](#)

A novel human coronavirus, now named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, referred to as HCoV-19 here) that emerged in Wuhan, China in late 2019 is now causing a pandemic. Here, we analyze the aerosol and surface stability of HCoV-19 and compare it with SARS-CoV-1, the most closely related human coronavirus.² We evaluated the stability of HCoV-19 and SARS-CoV-1 in ...

www.medrxiv.org

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD)
Sent: Sun, 26 Apr 2020 21:12:55 +0000
To: Chavez, Pollyanna R. (CDC/DDID/NCHHSTP/DHPSE); Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Cc: Brooks, John T. (CDC/DDID/NCHHSTP/DHPSE); King, Brian a. (CDC/DDNID/NCCDPHP/OSH)
Subject: RE: Reports on serologic coronavirus testing

(b)(3)

(b)(3)

Michele

S. Michele Owen
CDC IMS LAB TF
2019 nCoV Response
mowen@cdc.gov
W 404 639-1046
C (b)(6)

From: Chavez, Pollyanna R. (CDC/DDID/NCHHSTP/DHPSE) <geo5@cdc.gov>
Sent: Sunday, April 26, 2020 4:01 PM
To: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Brooks, John T. (CDC/DDID/NCHHSTP/DHPSE) <zud4@cdc.gov>; King, Brian a. (CDC/DDNID/NCCDPHP/OSH) <iyn3@cdc.gov>
Subject: FW: Reports on serologic coronavirus testing

Michele, Jeff: (b)(3)

(b)(3)

(b)(3)

Pollyanna R. Chavez, PhD

Epidemiologist

Detailed to the Office of Chief Medical Officer, CDC COVID-19 Response

ph: 404-639-1742

cell: (b)(6)

From: Ridzon, Renee (CDC/DDID/NCHHSTP/DHPSE) <rzt3@cdc.gov>

Sent: Sunday, April 26, 2020 2:30 PM

To: King, Brian a. (CDC/DDNID/NCCDPPH/OSH) <iyn3@cdc.gov>; Chavez, Pollyanna R. (CDC/DDID/NCHHSTP/DHPSE) <geo5@cdc.gov>

Subject: Fwd: Reports on serologic coronavirus testing

(b)(5)

Renee

Begin forwarded message:

From: "DeCock, Kevin (CDC/DDPHSIS/CGH/OD)" <kmd2@cdc.gov>

Subject: Reports on serologic coronavirus testing

Date: April 25, 2020 at 3:01:43 AM EDT

To: CDC KE All Americans <KEAllAmericans@cdc.gov>, "Juma, Bonventure (CDC/DDPHSIS/CGH/DGHP)" <xwl2@cdc.gov>, "Emukule, Gideon O. (CDC/DDID/NCIRD/ID)" <uyr9@cdc.gov>, "Mwangi, Jane W. (CDC/DDPHSIS/CGH/DGHT)" <hoy4@cdc.gov>, "NgAngA, Lucy W. (CDC/DDPHSIS/CGH/DGHT)" <hon5@cdc.gov>, "Katana, Abraham Kyuvi (CDC/DDPHSIS/CGH/DGHT)" <wvf0@cdc.gov>, "Marston, Barbara J. (CDC/DDPHSIS/CGH/DPDM)" <bxm5@cdc.gov>, "Alexander, Heather (CDC/DDPHSIS/CGH/DGHT)" <drz5@cdc.gov>

Colleagues

(b)(5)

reports on serologic testing for SARS-CoV-2. \

(b)(5)

(b)(5)

<https://www.nytimes.com/2020/04/24/health/coronavirus-antibody-tests.html>

https://www.dropbox.com/s/cd1628cau09288a/SARS-CoV-2_Serology_Manuscript.pdf

Kevin M. De Cock, MD

Senior Advisor

Acting CDC Kenya Country Director

Center for Global Health

Centers for Disease Control and Prevention

+254-722 515 294

From: Harcourt, Jennifer (CDC/DDID/NCIRD/DVD)
Sent: Tue, 26 May 2020 20:59:06 +0000
To: CDC IMS 2019 NCOV Response Lab TF Clearance;Lester, Sandra (CDC/DDID/NCIRD/DVD) (CTR);Mills, Lisa (CDC/DDID/NCIRD/DVD);Freeman, Brandi (CDC/DDID/NCIRD/DVD);Rasheed, Mohammed (CDC/DDID/NCIRD/DVD) (CTR)
Cc: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Subject: RE: Returning for Revision (not cleared)- CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

Natalie will be checking her emails while she is out of the office, it just may take her a quick minute or 3 to respond.

In the meantime, the co-authors that are CC'd here may be able to provide you with the necessary input.

Hopefully this helps,
Jennifer

From: CDC IMS 2019 NCOV Response Lab TF Clearance <eocevent216@cdc.gov>
Sent: Tuesday, May 26, 2020 3:38 PM
To: Harcourt, Jennifer (CDC/DDID/NCIRD/DVD) <zaq6@cdc.gov>
Cc: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Subject: Re: Returning for Revision (not cleared)- CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

Hi,

This manuscript from Natalie was returned for revisions by the JIC. Do you know who we could reach out to for edits while Natalie is out?

Thanks!
Brooke Aspinwall

CDC IMS 2019-nCoV Lab Task Force Clearance

eocevent216@cdc.gov

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Sent: Tuesday, May 26, 2020 3:31 PM
To: CDC IMS 2019 NCOV Response Lab TF Clearance <eocevent216@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Subject: RE: Returning for Revision (not cleared)- CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

Hmm thanks. Please send to Natalie with a cc to Jennifer Harcourt – she is not on it but she is in Natalie’s lab and perhaps could assist or tell us if she knows who else to work with.

Laboratory Task Force

404-639-3103 – office

678-576-2121 - mobile

From: CDC IMS 2019 NCOV Response Lab TF Clearance <eocevent216@cdc.gov>
Sent: Tuesday, May 26, 2020 3:21 PM
To: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Subject: Fw: Returning for Revision (not cleared)- CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

Hi,

This manuscript was returned for revision from the JIC.

Wendi, since Natalie is on leave this week should I send to someone else for revisions or wait until she's back?

Thanks!
Brooke

CDC IMS 2019-nCoV Lab Task Force Clearance

eocevent216@cdc.gov

From: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>
Sent: Tuesday, May 26, 2020 3:16 PM
To: CDC IMS 2019 NCOV Response Lab TF Clearance <eocevent216@cdc.gov>
Cc: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>
Subject: Returning for Revision (not cleared)- CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

Lab,

Please address response ADS and Epi TF comments and return clean and tracked revisions for further clearance. We will send back to Epi first then to the response ADS and onward.

Thanks,

Brian

JIC Emergency Clearance

COVID-19 Response

eocjicclear2@cdc.gov

From: CDC IMS 2019 NCOV Response EPI Clearance <eocevent210@cdc.gov>

Sent: Tuesday, May 26, 2020 3:10 PM

To: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>

Cc: Sotir, Mark (CDC/DDID/NCIRD/DVD) <mpps6@cdc.gov>; CDC IMS 2019 NCOV Response EPI Clearance <eocevent210@cdc.gov>

Subject: Re: For Epi Review by 5pm 5/26 - CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

Hi JIC,

The Epi-TF ADS did not clear this manuscript please see note below, and would like to review it again after the author address the comments.

(b)(5)

Thanks

Charmaine

Epi Task Force Clearance Coordinator

CDC IMS EPI TF Clearance

COVID-19 RESPONSE

eocevent210@cdc.gov

Coordinators:

Ahmed Kassem (M-F 6:30a-3p, Sundays 8a-8p)

Charmaine McKenzie (M-F 12:30p-9p; Saturdays 8a-8p)

From: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>
Sent: Monday, May 25, 2020 3:33 PM
To: CDC IMS 2019 NCOV Response EPI Clearance <eocevent210@cdc.gov>
Cc: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>
Subject: For Epi Review by 5pm 5/26 - CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

Epi,

The response ADS is requesting your review of the attached manuscript. Can you please return your comments by 5pm tomorrow?

Thanks,

Brian

JIC Emergency Clearance

COVID-19 Response

eocjicclear2@cdc.gov

From: Lyss, Sheryl (CDC/DDID/NCHHSTP/DHPSE) <sml8@cdc.gov>
Sent: Monday, May 25, 2020 3:06 PM
To: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>; Goldstein, Susan (CDC/DDID/NCIRD/OD) <stg1@cdc.gov>; CDC IMS 2019 NCOV Response ADS <eocevent264@cdc.gov>; Stokley, Shannon (CDC/DDID/NCIRD/ISD) <zma2@cdc.gov>; Gorwitz, Rachel (CDC/DDID/NCIRD/DBD) <rxg9@cdc.gov>; Shay, David (CDC/DDID/NCIRD/ID) <dks4@cdc.gov>; Shefer, Abigail (CDC/DDPHSIS/CGH/GID) <ams7@cdc.gov>; Nelson, Noele (CDC/DDID/NCHHSTP/DVH) <xdg9@cdc.gov>
Subject: RE: For ADS Review by 2pm 5/26 - CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

This report is not cleared.

(b)(5)

(b)(5)

(b)(5)

Thank you,
Sheryl

From: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>

Sent: Monday, May 25, 2020 1:10 PM

To: Goldstein, Susan (CDC/DDID/NCIRD/OD) <stg1@cdc.gov>; CDC IMS 2019 NCOV Response ADS <eocevent264@cdc.gov>; Stokley, Shannon (CDC/DDID/NCIRD/ISD) <zma2@cdc.gov>; Gorwitz, Rachel (CDC/DDID/NCIRD/DBD) <rxg9@cdc.gov>; Shay, David (CDC/DDID/NCIRD/ID) <dks4@cdc.gov>; Lyss, Sheryl (CDC/DDID/NCHHSTP/DHPSE) <sml8@cdc.gov>; Shefer, Abigail (CDC/DDPHSIS/CGH/GID) <ams7@cdc.gov>; Nelson, Noele (CDC/DDID/NCHHSTP/DVH) <xdg9@cdc.gov>

Cc: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>

Subject: For ADS Review by 2pm 5/26 - CID Brief Report - Seroprevalence of SARS-CoV-2 Antibodies in Seattle

ADS,

Please review the attached manuscript.

Thanks,

Brian

JIC Emergency Clearance

COVID-19 Response

eocjicclear2@cdc.gov

From: CDC IMS 2019 NCOV Response Lab TF Clearance <eocevent216@cdc.gov>

Sent: Monday, May 25, 2020 1:00 PM

To: CDC IMS JIC Emergency Clearance-2 <eocjicclear2@cdc.gov>

Subject: For clearance by 1pm 5/25/20

Please review and clear the attached manuscript.

Thanks,
Brooke

CDC IMS 2019-nCoV Lab Task Force Clearance

eocevent216@cdc.gov

From: Desai, Rita (CDC/DDID/NCIRD/DBD)
Sent: Wed, 8 Apr 2020 17:18:54 +0000
To: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Subject: RE: SARS-CoV-2 ELISA - Documents in Effect today

Thank you Vera!

From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Wednesday, April 8, 2020 1:16 PM
To: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR) <qcs8@cdc.gov>; Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD) <fky0@cdc.gov>; Boulay, Darbi (CDC/DDID/NCIRD/DBD) <dma7@cdc.gov>; Browning, Peter (CDC/DDID/NCIRD/DBD) <isk8@cdc.gov>; Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR) <axe6@cdc.gov>; David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR) <xxb5@cdc.gov>; Epperson, Monica (CDC/DDID/NCIRD/DBD) <wiu9@cdc.gov>; Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR) <ycu3@cdc.gov>; Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>; Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>; Martin, Jeffrey (CDC/DDID/NCIRD/DBD) (CTR) <aug3@cdc.gov>; Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR) <lzq9@cdc.gov>; Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR) <prr1@cdc.gov>; Park, So H. (CDC/DDID/NCIRD/DBD) (CTR) <xxa0@cdc.gov>; PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR) <qct4@cdc.gov>; Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR) <yvm4@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD) <eqs2@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>; Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR) <pvl6@cdc.gov>; Zellner, Briana (CDC/DDID/NCIRD/DBD) <qes9@cdc.gov>
Subject: RE: SARS-CoV-2 ELISA - Documents in Effect today

All,

(b)(5)

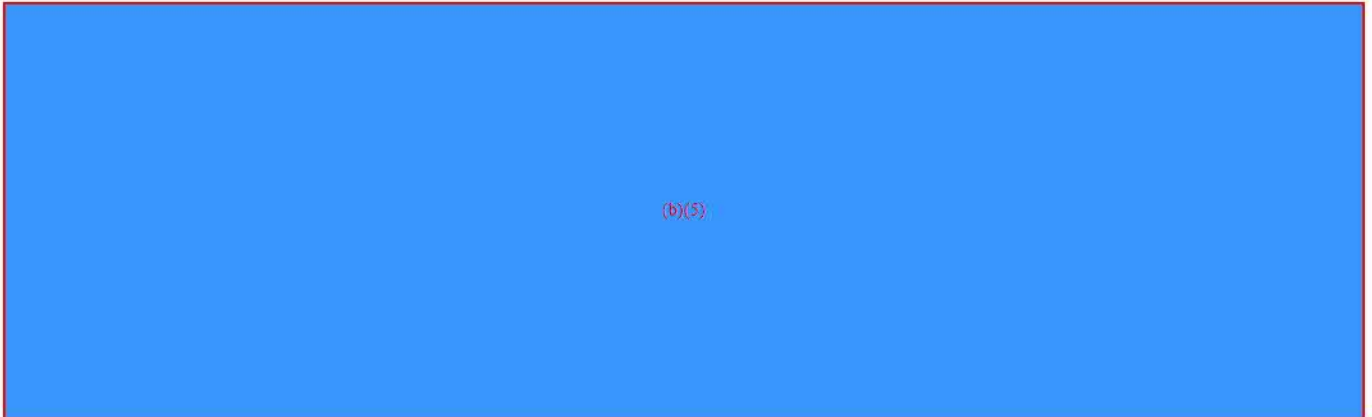
Thanks
Vera

From: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Sent: Tuesday, April 7, 2020 11:52 AM
To: Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR) <qcs8@cdc.gov>; Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD) <fky0@cdc.gov>; Boulay, Darbi (CDC/DDID/NCIRD/DBD) <dma7@cdc.gov>; Browning, Peter (CDC/DDID/NCIRD/DBD) <isk8@cdc.gov>; Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR) <axe6@cdc.gov>; David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR) <xxb5@cdc.gov>; Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Epperson, Monica (CDC/DDID/NCIRD/DBD) <wiu9@cdc.gov>; Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR) <ycu3@cdc.gov>; Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>; Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>; Martin, Jeffrey (CDC/DDID/NCIRD/DBD) (CTR) <aug3@cdc.gov>; Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR) <lzq9@cdc.gov>; Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR) <prr1@cdc.gov>; Park, So H. (CDC/DDID/NCIRD/DBD) (CTR) <xxa0@cdc.gov>; PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR) <qct4@cdc.gov>; Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR) <yvm4@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD)

<egs2@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>; Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR) <pvl6@cdc.gov>; Zellner, Briana (CDC/DDID/NCIRD/DBD) <ges9@cdc.gov>

Subject: SARS-CoV-2 ELISA - Documents in Effect today
Importance: High

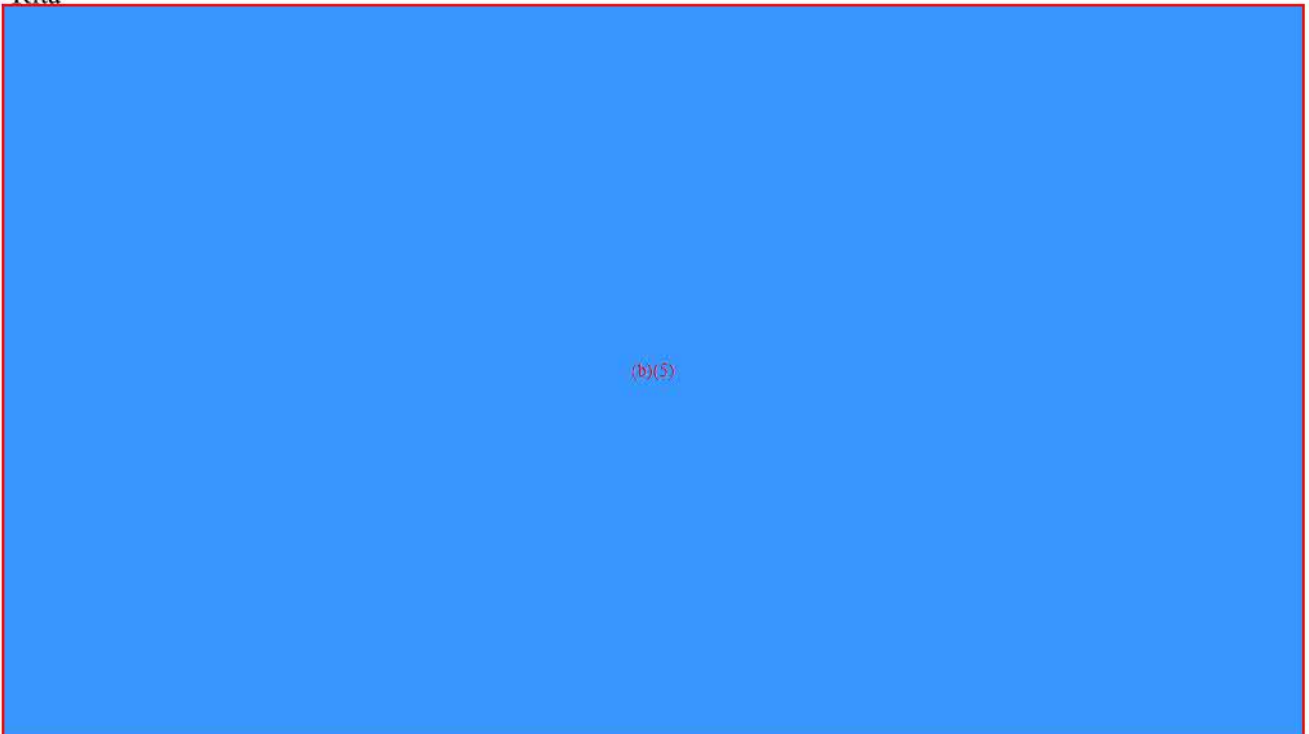
Hi Folks,



Please let me know if you have any questions or concerns.

Thank you!

Rita



Rita Desai, CMQ/OE, CQA (ASQ)
QA Team Lead, MPIR Laboratory
DDID/NCIRD/DBD/MVPDB
Centers for Disease Control and Prevention
Phone: 404-639-3887
Mobile: (b)(6)
Email: RDesai@cdc.gov
Telework Day: Wednesday



From: Desai, Rita (CDC/DDID/NCIRD/DBD)
Sent: Tue, 7 Apr 2020 22:03:05 +0000
To: Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR);Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD);Boulay, Darbi (CDC/DDID/NCIRD/DBD);Browning, Peter (CDC/DDID/NCIRD/DBD);Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR);David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR);Epperson, Monica (CDC/DDID/NCIRD/DBD);Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR);Li, Han (CDC/DDID/NCIRD/DBD);Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD);Martin, Jeffrey (CDC/DDID/NCIRD/DBD) (CTR);Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR);Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR);Park, So H. (CDC/DDID/NCIRD/DBD) (CTR);PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR);Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR);Schiffer, Jarad (CDC/DDID/NCIRD/DBD);Semenova, Vera (CDC/DDID/NCIRD/DBD);Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD);Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR);Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR);Zellner, Briana (CDC/DDID/NCIRD/DBD)
Subject: RE: SARS-CoV-2 ELISA - Documents in Effect today

Hi Folks,

I'm not quite done with the SOP binders. I will get you them first thing in the morning.

So sorry!

Rita

From: Desai, Rita (CDC/DDID/NCIRD/DBD)
Sent: Tuesday, April 7, 2020 11:52 AM
To: Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR) <qcs8@cdc.gov>; Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD) <fky0@cdc.gov>; Boulay, Darbi (CDC/DDID/NCIRD/DBD) <dma7@cdc.gov>; Browning, Peter (CDC/DDID/NCIRD/DBD) <isk8@cdc.gov>; Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR) <axe6@cdc.gov>; David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR) <xxb5@cdc.gov>; Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Epperson, Monica (CDC/DDID/NCIRD/DBD) <wiu9@cdc.gov>; Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR) <ycu3@cdc.gov>; Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>; Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>; Martin, Jeffrey (CDC/DDID/NCIRD/DBD) (CTR) <aug3@cdc.gov>; Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR) <lzq9@cdc.gov>; Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR) <prr1@cdc.gov>; Park, So H. (CDC/DDID/NCIRD/DBD) (CTR) <xxa0@cdc.gov>; PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR) <qct4@cdc.gov>; Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR) <yvm4@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD) <eqs2@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>; Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR) <pvl6@cdc.gov>; Zellner, Briana (CDC/DDID/NCIRD/DBD) <qes9@cdc.gov>
Subject: SARS-CoV-2 ELISA - Documents in Effect today
Importance: High

Hi Folks,

(b)(5)

Thank you!

Rita

(b)(5)

Rita Desai, CMQ/OE, CQA (ASQ)
QA Team Lead, MPIR Laboratory
DDID/NCIRD/DBD/MVPDB
Centers for Disease Control and Prevention
Phone: 404-639-3887
Mobile: (b)(6)

Email: RDesai@cdc.gov
Telework Day: Wednesday



From: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Sent: Tue, 7 Apr 2020 16:09:33 +0000
To: Desai, Rita (CDC/DDID/NCIRD/DBD)
Subject: RE: SARS-CoV-2 ELISA - Documents in Effect today

Thank you Rita!

From: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Sent: Tuesday, April 7, 2020 11:52 AM
To: Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR) <qcs8@cdc.gov>; Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD) <fky0@cdc.gov>; Boulay, Darbi (CDC/DDID/NCIRD/DBD) <dma7@cdc.gov>; Browning, Peter (CDC/DDID/NCIRD/DBD) <isk8@cdc.gov>; Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR) <axe6@cdc.gov>; David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR) <xxb5@cdc.gov>; Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Epperson, Monica (CDC/DDID/NCIRD/DBD) <wiu9@cdc.gov>; Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR) <yuc3@cdc.gov>; Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>; Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>; Martin, Jeffrey (CDC/DDID/NCIRD/DBD) (CTR) <aug3@cdc.gov>; Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR) <lzq9@cdc.gov>; Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR) <prr1@cdc.gov>; Park, So H. (CDC/DDID/NCIRD/DBD) (CTR) <xxa0@cdc.gov>; PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR) <qct4@cdc.gov>; Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR) <yvm4@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD) <eqs2@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>; Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR) <pvl6@cdc.gov>; Zellner, Briana (CDC/DDID/NCIRD/DBD) <qes9@cdc.gov>
Subject: SARS-CoV-2 ELISA - Documents in Effect today
Importance: High

Hi Folks,

(b)(5)

Thank you!

Rita

(b)(5)

Rita Desai, CMQ/OE, CQA (ASQ)
QA Team Lead, MPIR Laboratory
DDID/NCIRD/DBD/MVPDB
Centers for Disease Control and Prevention
Phone: 404-639-3887
Mobile: (b)(5)
Email: RDesai@cdc.gov
Telework Day: Wednesday



From: Desai, Rita (CDC/DDID/NCIRD/DBD)
Sent: Wed, 15 Apr 2020 19:21:33 +0000
To: Semenova, Vera (CDC/DDID/NCIRD/DBD)
Subject: RE: SARS-CoV-2 ELISA - SofUs circulating



From: Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>
Sent: Wednesday, April 15, 2020 3:20 PM
To: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Subject: RE: SARS-CoV-2 ELISA - SofUs circulating

Thank you Rita!
Vera

From: Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>
Sent: Wednesday, April 15, 2020 3:10 PM
To: Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR) <qcs8@cdc.gov>; Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD) <fky0@cdc.gov>; Boulay, Darbi (CDC/DDID/NCIRD/DBD) <dma7@cdc.gov>; Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR) <axe6@cdc.gov>; David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR) <xxb5@cdc.gov>; Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Epperson, Monica (CDC/DDID/NCIRD/DBD) <wiu9@cdc.gov>; Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR) <yuc3@cdc.gov>; Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>; Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>; Martin, Jeffrey (CDC/DDID/NCIRD/DBD) (CTR) <aug3@cdc.gov>; Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR) <lzq9@cdc.gov>; Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR) <pr1@cdc.gov>; Park, So H. (CDC/DDID/NCIRD/DBD) (CTR) <xxa0@cdc.gov>; PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR) <qct4@cdc.gov>; Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR) <yvm4@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD) <eqs2@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>; Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR) <pvl6@cdc.gov>; Zellner, Briana (CDC/DDID/NCIRD/DBD) <ges9@cdc.gov>
Subject: SARS-CoV-2 ELISA - SofUs circulating
Importance: High

Hi Team,

(b)(5)

(b)(5)

Thank you!

Rita

Rita Desai, CMQ/OE, CQA (ASQ)
QA Team Lead, MPIR Laboratory
DDID/NCIRD/DBD/MVPDB
Centers for Disease Control and Prevention
Phone: 404-639-3887
Mobile: (b)(6)
Email: RDesai@cdc.gov
Telework Day: Wednesday



From: Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP)
Sent: Fri, 8 May 2020 13:08:05 +0000
To: Klena, John D. (CDC/DDID/NCEZID/DHCPP);Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP);Chiang, Cheng-Feng (CDC/DDID/NCEZID/DHCPP)
Subject: RE: SARS-CoV-2 ELISA SOP

(b)(5)

From: Klena, John D. (CDC/DDID/NCEZID/DHCPP) <irc4@cdc.gov>
Sent: Friday, May 8, 2020 8:43 AM
To: Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP) <dsc4@cdc.gov>; Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP) <ztq9@cdc.gov>; Chiang, Cheng-Feng (CDC/DDID/NCEZID/DHCPP) <div4@cdc.gov>
Subject: RE: SARS-CoV-2 ELISA SOP

(b)(5)

From: Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP) <dsc4@cdc.gov>
Sent: Friday, May 8, 2020 7:41 AM
To: Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP) <ztq9@cdc.gov>; Klena, John D. (CDC/DDID/NCEZID/DHCPP) <irc4@cdc.gov>; Chiang, Cheng-Feng (CDC/DDID/NCEZID/DHCPP) <div4@cdc.gov>
Subject: RE: SARS-CoV-2 ELISA SOP

(b)(5)

D

From: Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP) <ztq9@cdc.gov>
Sent: Thursday, May 7, 2020 9:08 PM
To: Klena, John D. (CDC/DDID/NCEZID/DHCPP) <irc4@cdc.gov>; Chiang, Cheng-Feng (CDC/DDID/NCEZID/DHCPP) <div4@cdc.gov>; Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP) <dsc4@cdc.gov>
Subject: SARS-CoV-2 ELISA SOP

Hey Guys.

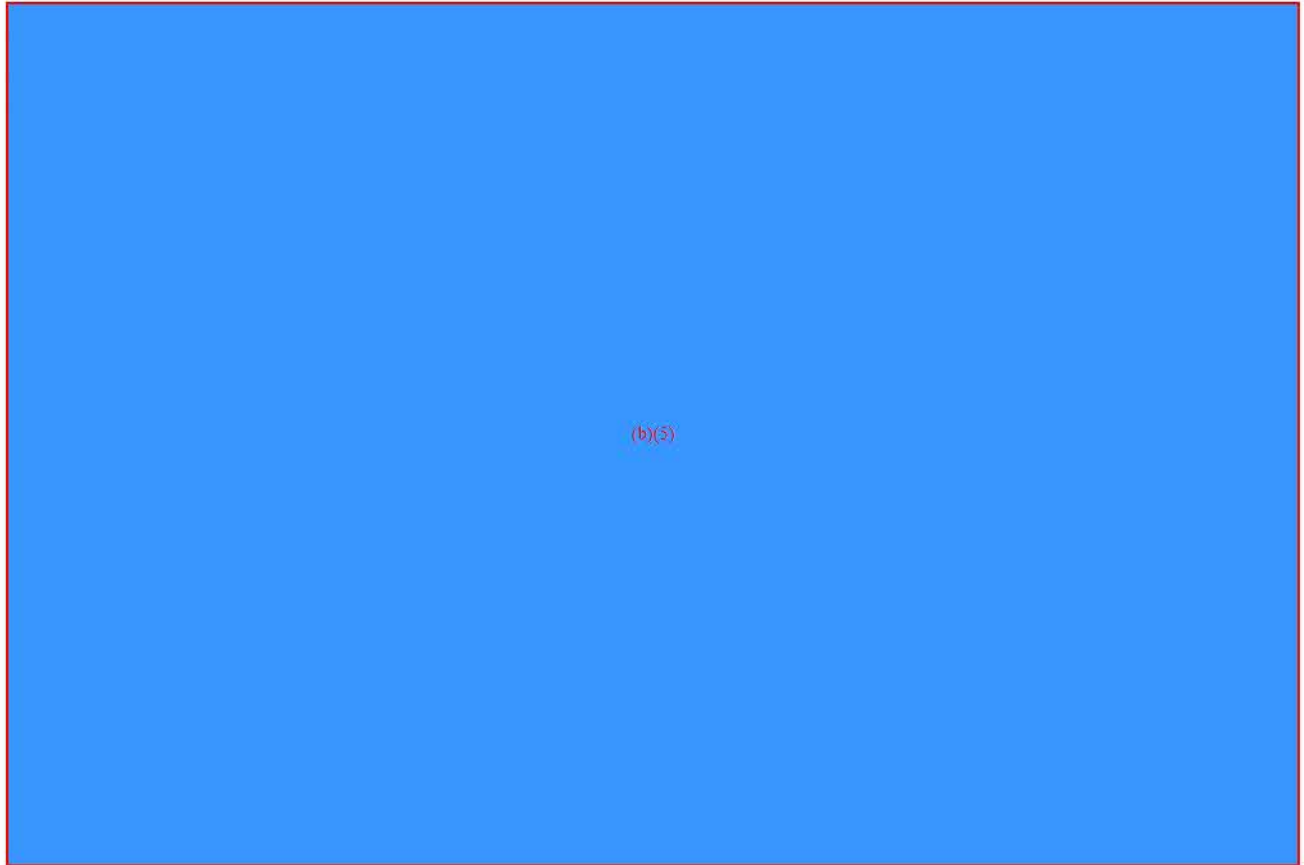
(b)(5)

Thanks.
J.

Joel M. Montgomery, PhD
CAPT US Public Health Service
Chief, Viral Special Pathogens Branch
Division of High Consequence Pathogens and Pathology (DHCPP)
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
U.S. Centers for Disease Control and Prevention (CDC)
1600 Clifton Road, NE, MS H16-5, Atlanta, GA 30329
404.718.1444 office | (b)(6) cell | ztq9@cdc.gov

From: Payne, Daniel C. (CDC/DDID/NCEZID/DFWED)
Sent: Thu, 9 Apr 2020 21:49:50 +0000
To: CDC IMS 2019 NCOV Response EPI TF Ops Coordinator; CDC IMS 2019 NCOV Response EPI Task Force; CDC IMS 2019 NCOV Response Lab Task Force
Cc: Carroll, Darin (CDC/DDID/NCEZID/OD); Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD); Bresee, Joseph (CDC/DDID/NCIRD/ID); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Limbago, Brandi (CDC/DDID/NCIRD/OD); Fry, Alicia (CDC/DDID/NCIRD/ID); Hall, Aron (CDC/DDID/NCIRD/DVD); Soroka, Stephen (CDC/DDID/NCEZID/OD); Hemby, Taylor (CDC/DDID/NCEZID/OD) (CTR); Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE); Belay, Ermias (CDC/DDID/NCEZID/DHCPP); Gerber, Susan I. (CDC/DDID/NCIRD/DVD); Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Subject: Coordinating SARS-CoV-2 serologic studies - Epi/ Lab PROCESS

Good evening –



Regards,
Dan, Darin, and Michele

From: service05@bio.sanyoubio.com on behalf of "sanyoubio"
<service@sanyoubio.com>
Sent: Mon, 06 Apr 2020 21:30:13 +0800
To: Carroll, Darin (CDC/DDID/NCEZID/OD)
Subject: COVID-19 | A full bundle of high-quality SARS-CoV-2 proteins and antibodies available

Dear Professor,

Recently, the epidemic of COVID-19 has been announced as a "Global Pandemic". As a leading research and development company for innovative antibody drugs, Sanyou Biopharmaceuticals has provided high-quality SARS-CoV-2(2019-nCoV) proteins and antibodies with blocking activities to more than 150 research institutions and companies around the world.

Our products comprise the complete spectrum of SARS-CoV-2 proteins and antibodies, including Spike S1 protein, Spike-RBD protein, N protein, human ACE2 protein and monoclonal antibodies against all proteins listed above. Below is a complete product list. And we warmly welcome you to email us at service@sanyoubio.com for an inquiry about more specific information to help with your research or product development.

Product List (SARS-CoV-2/2019-nCoV)

	Cat#	Name	Species	Subtype/Label	Expression System
Protein	PNA001	Spike S1	SARS-CoV-2	Fc	HEK293
	PNA002	Spike S1	SARS-CoV-2	His	HEK293
	PNA003	Spike	SARS-CoV-2	Fc	HEK293

		RBD			
	PNA004	Spike RBD	SARS-CoV-2	His	HEK293
	PNA005	Nucleocapsid Protein	SARS-CoV-2	His	E.coli
	PNA006	Nucleocapsid Protein	SARS-CoV-2	His	HEK293
	PHA001	ACE2 protein	human	Fc	HEK293
	PHA002	ACE2 protein	human	His	HEK293
	PMA001	ACE2 protein	mouse	Fc	HEK293
Antibody	AHA001	Anti-Spike-RBD mAb	Human	Human-IgG1	CHO
	AHA003	Anti-Spike-RBD mAb	Human	Human-IgG1	CHO

	AHA004	Anti-Spike-RBD mAb	Human	Human-IgG1	CHO
	AHA013	Anti-Spike-RBD mAb	Human	Human-IgG1	CHO
	AHA014	Anti-Spike-RBD mAb	Human	Human-IgG1	CHO
	AHA005	Anti-Spike-RBD mAb	Human	Human-IgM	CHO
	ANA001	Anti-Spike-RBD single domain mAb	Alpaca	Fc(IgG)	CHO
	ANA002	Anti-Spike-RBD single domain	Alpaca	Fc(IgG)	CHO

		mAb			
	ANA003	Anti-Spike-RBD single domain mAb	Alpaca	Fc(IgG)	CHO
	ANA004	Anti-Spike-RBD single domain mAb	Alpaca	Fc(IgG)	CHO
	AHA006	Anti-N-protein mAb	Human	Human-IgG1	CHO
	AHA009	Anti-N-protein mAb	Human	Human-IgG1	CHO
	AHA015	Anti-N-protein mAb	Human	Human-IgM	CHO
	AHA016	Anti-N-protein mAb	Human	Human-IgM	CHO

	AHA007	Anti-ACE2 mAb	Human	Human-IgG1	CHO
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Product Highlights

1. **A full bundle of of SARS-CoV-2 proteins and antibodies.** We provide 9 recombinant proteins and human ACE2 protein.
2. **High purity and rigorous quality control.** The purity of all products is more than 95%. We have
3. **Excellent affinity and blocking activity.** Binding between each protein and its corresponding ar
4. **Human mAb and single-domain mAb.** The monoclonal antibodies are full human mAbs or sing
5. **Paired antibodies for immunoassay.** Paired anti-Spike-RBD human mAbs can target different e

You can click the following link for more details:

<https://www.sanyoubio.com/EN/2019-nCoV.php>

More protein and antibody customized service for your reference:

Service Type	Raw Material Preparation	Lead Antibody Generation	Antibody Engineering
Service Name	<ul style="list-style-type: none"> ▶ Protein ▶ Antibody expression ▶ Cell line 	<ul style="list-style-type: none"> ▶ Mouse mAbs ▶ Human mAbs ▶ Single Domain mAbs 	<ul style="list-style-type: none"> ▶ Humanization ▶ Affinity maturation
Service Type	Functional Screening	Animal Model Screening	Cell Line Construction
Service Name	<ul style="list-style-type: none"> ▶ Functional assay ▶ Systemic <i>In Vitro</i> Efficacy Evaluation ▶ Physicochemical analysis 	<ul style="list-style-type: none"> ▶ Animal models 	<ul style="list-style-type: none"> ▶ Cell line development

You could click on the service name in the table and get detailed information.

Sanyou Biopharmaceuticals Co., Ltd.

Website : www.sanyoubio.com

Email : service@sanyoubio.com

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From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD)
Sent: Sat, 18 Apr 2020 18:07:02 +0000
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Subject: RE: SARS-CoV-2 serologic testing

Jeff I can talk.
Call my cell

(b)(6)

Michele

S. Michele Owen
CDC IMS LAB TF
2019 nCoV Response
mowen@cdc.gov
W 404 639-1046
C (b)(6)

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Saturday, April 18, 2020 1:15 PM
To: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: Re: SARS-CoV-2 serologic testing

Hi,

(b)(5)

Jeff

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Sent: Saturday, April 18, 2020 12:16:27 PM
To: Hooper, Craig (CDC/DDID/NCBDDD/DBD) <woh1@cdc.gov>; Bean, Christopher (CDC/DDID/NCBDDD/DBD) <est6@cdc.gov>
Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbi7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>
Subject: RE: SARS-CoV-2 serologic testing

Thanks for the quick response.

(b)(5)

Thanks,
Michele
S. Michele Owen
CDC IMS LAB TF

2019 nCoV Response

mowen@cdc.gov

W 404 639-1046

C (b)(6)

From: Hooper, Craig (CDC/DDNID/NCBDDD/DBD) <woh1@cdc.gov>

Sent: Saturday, April 18, 2020 12:05 PM

To: Bean, Christopher (CDC/DDNID/NCBDDD/DBD) <est6@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>

Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jjj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbl7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>

Subject: Re: SARS-CoV-2 serologic testing

Thsnks Michele.. (b)(5)

(b)(5)

Thanks

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>

Sent: Saturday, April 18, 2020 11:49:33 AM

To: Bean, Christopher (CDC/DDNID/NCBDDD/DBD) <est6@cdc.gov>; Hooper, Craig (CDC/DDNID/NCBDDD/DBD) <woh1@cdc.gov>

Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jjj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbl7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>

Subject: SARS-CoV-2 serologic testing

Hi Craig and Chris,

(b)(5)

Best,
Michele

S. Michele Owen, PhD
CDC IMS LAB TF- Co-Lead
2019 nCoV Response

mowen@cdc.gov

W 404 639-1046

C (b)(6)

From: Hooper, Craig (CDC/DDNID/NCBDDD/DBD)
Sent: Sat, 18 Apr 2020 16:27:39 +0000
To: Bean, Christopher (CDC/DDNID/NCBDDD/DBD);Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD)
Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE);Limbago, Brandi (CDC/DDID/NCIRD/OD);Kuhnert-Tallman, Wendi (CDC/DDID/OD);Carroll, Darin (CDC/DDID/NCEZID/OD)
Subject: Re: SARS-CoV-2 serologic testing

Thanks.. (b)(5)

(b)(5)

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Sent: Saturday, April 18, 2020 12:16:27 PM
To: Hooper, Craig (CDC/DDNID/NCBDDD/DBD) <woh1@cdc.gov>; Bean, Christopher (CDC/DDNID/NCBDDD/DBD) <est6@cdc.gov>
Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbl7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>
Subject: RE: SARS-CoV-2 serologic testing

Thanks for the quick response.

(b)(5)

Thanks,
Michele
S. Michele Owen
CDC IMS LAB TF
2019 nCoV Response
mowen@cdc.gov
W 404 639-1046
C (b)(6)

From: Hooper, Craig (CDC/DDNID/NCBDDD/DBD) <woh1@cdc.gov>
Sent: Saturday, April 18, 2020 12:05 PM
To: Bean, Christopher (CDC/DDNID/NCBDDD/DBD) <est6@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbl7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>
Subject: Re: SARS-CoV-2 serologic testing

Thsnks Michele... (b)(5)

(b)(5)

(b)(3)

Thanks

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>

Sent: Saturday, April 18, 2020 11:49:33 AM

To: Bean, Christopher (CDC/DDNID/NCBDDD/DBD) <est6@cdc.gov>; Hooper, Craig (CDC/DDNID/NCBDDD/DBD) <woh1@cdc.gov>

Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <ilj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbl7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>

Subject: SARS-CoV-2 serologic testing

Hi Craig and Chris,

(b)(5)

Best,
Michele

S. Michele Owen, PhD
CDC IMS LAB TF- Co-Lead
2019 nCoV Response

mowen@cdc.gov

W 404 639-1046

C (b)(6)

From: Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD)
Sent: Fri, 10 Apr 2020 14:48:21 +0000
To: Browning, Peter (CDC/DDID/NCIRD/DBD);Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR);Ategbale, Muyiwa (CDC/DDID/NCIRD/DBD) (CTR);Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD);Boulay, Darbi (CDC/DDID/NCIRD/DBD);Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR);David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR);Desai, Rita (CDC/DDID/NCIRD/DBD);Epperson, Monica (CDC/DDID/NCIRD/DBD);Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR);Jia, Lily Tao (CDC/DDID/NCIRD/DBD);Li, Han (CDC/DDID/NCIRD/DBD);Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD);Martin, Jeffrey (CDC/DDID/NCIRD/DBD) (CTR);Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR);Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR);Park, So H. (CDC/DDID/NCIRD/DBD) (CTR);PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR);Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR);Schiffer, Jarad (CDC/DDID/NCIRD/DBD);Semenova, Vera (CDC/DDID/NCIRD/DBD);Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR);Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR);Zellner, Briana (CDC/DDID/NCIRD/DBD)
Cc: Browning, Peter (CDC/DDID/NCIRD/DBD)
Subject: RE: SARS-CoV-2 Specific ELISA PlateS

(b)(5)

To: Alston, Bailey (CDC/DDID/NCIRD/DBD) (CTR) <qcs8@cdc.gov>; Ategbale, Muyiwa (CDC/DDID/NCIRD/DBD) (CTR) <oyh4@cdc.gov>; Bolcen, Shanna J. (CDC/DDID/NCIRD/DBD) <fky0@cdc.gov>; Boulay, Darbi (CDC/DDID/NCIRD/DBD) <dma7@cdc.gov>; Browning, Peter (CDC/DDID/NCIRD/DBD) <isk8@cdc.gov>; Cronin, Li (CDC/DDID/NCIRD/DBD) (CTR) <axe6@cdc.gov>; David, Ebenezer (CDC/DDID/NCIRD/DBD) (CTR) <xxb5@cdc.gov>; Desai, Rita (CDC/DDID/NCIRD/DBD) <rwd7@cdc.gov>; Epperson, Monica (CDC/DDID/NCIRD/DBD) <wiu9@cdc.gov>; Gorantla, Yamini (CDC/DDID/NCIRD/DBD) (CTR) <ycu3@cdc.gov>; Jia, Lily Tao (CDC/DDID/NCIRD/DBD) <lij7@cdc.gov>; Li, Han (CDC/DDID/NCIRD/DBD) <hbl1@cdc.gov>; Maniatis, Panagiotis (Pete) (CDC/DDID/NCIRD/DBD) <vhd2@cdc.gov>; Martin, Jeffrey (CDC/DDID/NCIRD/DBD) (CTR) <aug3@cdc.gov>; Moss, Kimberly (CDC/DDID/NCIRD/DBD) (CTR) <lzq9@cdc.gov>; Ortiz, Kristina (CDC/DDID/NCIRD/DBD) (CTR) <prr1@cdc.gov>; Park, So H. (CDC/DDID/NCIRD/DBD) (CTR) <xxa0@cdc.gov>; PATEL, Palak (CDC/DDID/NCIRD/DBD) (CTR) <qct4@cdc.gov>; Qin, Yunlong (CDC/DDID/NCIRD/DBD) (CTR) <yvm4@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Semenova, Vera (CDC/DDID/NCIRD/DBD) <vas7@cdc.gov>; Steward-Clark, Evelene P. (CDC/DDID/NCIRD/DBD) <eqs2@cdc.gov>; Tatum, Heather R. (CDC/DDID/NCIRD/DBD) (CTR) <gpg7@cdc.gov>; Vogan, Andrew (CDC/DDID/NCIRD/DBD) (CTR) <pvl6@cdc.gov>; Zellner, Briana (CDC/DDID/NCIRD/DBD) <qes9@cdc.gov>

From: William Dowling
Sent: Tue, 10 Mar 2020 21:48:57 +0000
To: cheryl@gisaid.org; Holbrook, Michael (NIH/NIAID) [C]; Hensley, Lisa (NIH/NIAID) [E]; rbaric@email.unc.edu; HENAO RESTREPO, Ana Maria; GSELL, Pierre; COSTA, Alejandro Javier; RIVEROS BALTA, Alina Ximena; Munster, Vincent (NIH/NIAID) [E]; daszak@ecohealthalliance.org; b.haagmans@erasmusmc.nl; Vasan, Vasan (H&B, Geelong AAHL; linfa.wang@duke-nus.edu.sg; jokim@ivi.int; mksong@ivi.int; Volker.gerdt@usask.ca; Giada.Mattiuzzo@nibsc.org; zlshi@wh.iov.cn; Barbara.Schnierle@pei.de; leejooyeon@korea.kr; limhy0919@korea.kr; Damon, Inger K. (CDC/DDID/NCEZID/DHCPP); christian.brechot; Kayvon Modjarrad; Amy C. Shurtleff; Stemmy, Erik (NIH/NIAID) [E]; Julia.Tree@phe.gov.uk; Mark Page; Graham, Barney (NIH/VRC) [E]; Falzarano, Darryl; Thue, Tracey; Hodgson, Paul; Napper, Scott; Nicola Rose; M.P.G. Koopmans; sgerber@cdc.gov; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID); Gerber, Susan I. (CDC/DDID/NCIRD/DVD); Carroll, Darin (CDC/DDID/NCEZID/OD); Watson, John (CDC/DDID/NCIRD/DVD); Lathey, Janet (NIH/NIAID) [E]; Degrace, Marciela (NIH/NIAID) [E]; SATHIYAMOORTHY, Vaseeharan; gustavo.f.palacios.civ@mail.mil; Pallansch, Mark A. (CDC/DDID/NCIRD/DVD); MFrieman@som.umaryland.edu; REIRELAND@mail.dstl.gov.uk; SPoehlmann@dpz.eu; mhoffmann@dpz.eu; sylvie.van-der-werf@pasteur.fr; Nelson Michelle; Lever Steve; Prior Joann L; Marston, Hilary (NIH/NIAID) [E]; De wit, Emmie (NIH/NIAID) [E]; mit666666@pitt.edu; Mellors, John W; tlying@fudan.edu.cn; christian.drosten@charite.de; David Vaughn; Jacqueline Kirchner; Karen Makar; florian.krammer@mssm.edu; perkinsm@who.int; Guthrie, Erica (CDC/DDID/NCIRD/ID); Thornburg, Natalie (CDC/DDID/NCIRD/DVD); Baric, Toni C; SALAMI, Kolawole; Simon Funnell; Cesar Munoz-fontela; Monalisa Chatterji; Johnson, Reed (NIH/NIAID) [E]; wilsonp@uchicago.edu; Little, James (OS/ASPR/BARDA); Jayashankar, Lakshmi (OS/ASPR/BARDA); Erlandson, Karl (OS/ASPR/BARDA); Smith, Ashley (OS/ASPR/BARDA); Kovacs, Gerald (OS/ASPR/BARDA) (CTR)
Subject: RE: WHO Consultation on SARS-CoV -2 Reagents, Cross reactivity and immune Assays - Wed 1 PM CET
Attachments: WHO Assays agenda March11.docx, RD Blueprint lab expert group cross-reactivity call Mar 4 2020.docx

Hello all

Here are draft minutes from the last meeting and also the agenda for tomorrow's call.

Bill

-----Original Appointment-----

From: William Dowling
Sent: Monday, March 9, 2020 3:27 PM
To: William Dowling; cheryl@gisaid.org; Michael.holbrook@nih.gov; lisa.hensley@nih.gov; rbaric@email.unc.edu; HENAO RESTREPO, Ana Maria; GSELL, Pierre; COSTA, Alejandro Javier; RIVEROS BALTA, Alina Ximena; vincent.munster@nih.gov; daszak@ecohealthalliance.org; b.haagmans@erasmusmc.nl; Vasan, Vasan (H&B, Geelong AAHL; linfa.wang@duke-nus.edu.sg; jokim@ivi.int; mksong@ivi.int; Volker.gerdt@usask.ca; Giada.Mattiuzzo@nibsc.org; zlshi@wh.iov.cn; Barbara.Schnierle@pei.de; leejooyeon@korea.kr; limhy0919@korea.kr; lad7@cdc.gov; christian.brechot@pasteur.fr; Kayvon Modjarrad; Amy C. Shurtleff; erik.stemmy@nih.gov;

Julia.Tree@phe.gov.uk; Mark Page; Graham, Barney (NIH/VRC) [E; Falzarano, Darryl; Thue, Tracey; Hodgson, Paul; Napper, Scott; Nicola Rose; M.P.G. Koopmans; sgerber@cdc.gov; djernigan@cdc.gov; Gerber, Susan I. (CDC/DDID/NCIRD/DVD); Carroll, Darin (CDC/DDID/NCEZID/OD); Watson, John (CDC/DDID/NCIRD/DVD); Lathey, Janet (NIH/NIAID) [E]; Degrace, Marciela (NIH/NIAID) [E]; SATHIYAMOORTHY, Vaseeharan; gustavo.f.palacios.civ@mail.mil; Pallansch, Mark A. (CDC/DDID/NCIRD/DVD); MFrieman@som.umaryland.edu; REIRELAND@mail.dstl.gov.uk; SPoehlmann@dpz.eu; mhoffmann@dpz.eu; sylvie.van-der-werf@pasteur.fr; Nelson Michelle; Lever Steve; Prior Joann L; Marston, Hilary (NIH/NIAID) [E]; De wit, Emmie (NIH/NIAID) [E]; mit666666@pitt.edu; Mellors, John W; tlying@fudan.edu.cn; christian.drosten@charite.de; David Vaughn; Jacqueline Kirchner; Karen Makar; florian.krammer@mssm.edu; perkinsm@who.int; Guthrie, Erica (CDC/DDID/NCIRD/ID); Thornburg, Natalie (CDC/DDID/NCIRD/DVD); Baric, Toni C; SALAMI, Kolawole; Simon Funnell; Cesar Munoz-fontela; Monalisa Chatterji

Subject: WHO Consultation on SARS-CoV -2 Reagents, Cross reactivity and immune Assays - Wed 1 PM CET

When: Wednesday, March 11, 2020 8:00 AM-9:00 AM (UTC-05:00) Eastern Time (US & Canada).

Where: Telecon

Hello all

The next meeting will be at 1 PM CET on Wednesday. The agenda and other materials will be uploaded in advance of the meeting.

Also, this will use a WHO HQ phone line rather than Skype. There are not multiple numbers, so please try to plan accordingly.

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Thanks
Bill

WHO *ad hoc* working group on COVID-19 Assays and development
Agenda for 11 MAR 2020

1. Propagation and virus stocks

- a. New stocks available?
- b. Optimal cell lines and conditions to generate virus stocks
- c. Viruses and standards to ensure reproducibility

2. Decontamination protocols

- a. Sera
- b. PCR
- c. Other applications

3. Serology

- a. Updates on patient sera and B cells
- b. ELISA to discriminate SARS2 from 'endogenous' coronaviruses, SARS1 and MERS CoV
- c. Ig-specific ELISAs (e. g. IgA for mucosal immunity)
- d. Updates on cross reactivity results

4. T cell assays

- d. ELISPOT
- e. Others?

5. Next meeting

6. Wednesday 18th March at 14:00 CET (Geneva time)



**World Health
Organization**

WHO R&D Blueprint COVID-1

**Reagents, Cross-reactivity and Immune Assays
Working Group**

March 4, 2020

Geneva, Switzerland



R&D Blueprint

Powering research
to prevent epidemics



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DRAFT



Participants

Members of the R&D Blueprint Cross-Reactivity expert group

Name	Position	Institutional Affiliation
Miles Carroll	Deputy Director Head of Research & Development Institute	National Infections Service Public Health England
Dimiter Dimitrov	Director, Center for Antibody Therapeutics	University of Pittsburgh
William Dowling	Non-Clinical Vaccine Development Leader	CEPI (seconded to WHO)
Darryl Falzarano	Research Scientist	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
William Florence	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Matthew Frieman	Associate Professor	Institute of Human Virology, University of Maryland
Simon Funnell	Scientific Leader	Public Health England (Seconded to WHO)
Barney Graham	Deputy Director, Chief, Viral Pathogenesis Laboratory and Translational Science Core	Vaccine Research Center, National Institute of Allergy and Infectious Diseases



Name	Position	Institutional Affiliation
Lisa Hensley	Associate Director, Integrated Research Facility	National Institute of Allergy and Infectious Diseases
Mike Holbrook	High Containment Supervisor, Integrated Research Facility	National Institute of Allergy and Infectious Diseases
Janet Lathey	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Florian Krammer	Professor	Microbiology Department, Icahn School of Medicine at Mount Sinai
Steve Lever	Virology Lead	CBR Division, Dstl porton Down
Karen Makar		Bill and Melinda Gates Foundation
Giada Mattiuzzo	Senior Scientist	National Institute for Biological Standards and Control
Kaitlyn Morabito		Vaccine Research Center, National Institute of Allergy and Infectious Disease
César Muñoz-Fontela	Professor	Bernard-Nocht-Institut für Tropenmedizin (seconded to WHO)
Mark Page	Principal Scientist	Division of Virology National Institute for Biological Standards and Control



Name	Position	Institutional Affiliation
Mark Pallansch	Director, Division of Viral Diseases	National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention
Barbara Schnierle	Head of AIDS, New and Emerging Pathogens Section)	Paul Ehrlich Institut
Sophie Smither		CBR Division Dstl Porton Down
Erik Stemmy	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Natalie Thornburg	Team Leader, Respiratory viruses immunology	Division of Viral Diseases, National Center for Immunization and Respiratory Diseases Centers for Disease Control and Prevention
Seshadri Vasan	Senior Principal Research Consultant Team Leader - Dangerous Pathogens	CSIRO Health & Biosecurity

Experts invited but unable to attend

Name	Position	Institutional Affiliation
Ralph Baric	William R. Kenan, Jr. Distinguished Professor	Department of Epidemiology



	Professor	Department of Microbiology and Immunology University of North Carolina
Karin Bok	Senior Advisor Vaccine Development,	Vaccine Research Center, National Institute of Allergy and Infectious Diseases
Christian Bréchet	President Professor Dept of Internal Medecine and Senior Associate Dean for Research in Global Affairs; Associate Vice-President for International Partnerships and Innovation Senior adviser Emeritus Professor Former President	Global Virus Network University of South Florida Romark Laboratory LC, Tampa, Florida, USA Paris-Descartes University, Paris Institut Pasteur
Carolyn Clark	Scientist	CEPI
Darin Carroll	Poxvirus and Rabies Branch	National Center for Emerging and Zoonotic Infectious Diseases , Centers for Disease Control and Prevention , Centers for Disease Control and Prevention
Inger Damon	Director, Division of High Consequence Pathogens and Pathology	Centers for Disease Control and Prevention
Peter Daszak	President	EcoHealth Alliance



Marciela De Grace	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Emmie de Wit	Chief, Molecular Pathogenesis Unit	Rocky Mountain Laboratory, National Institute of Allergy and Infectious Diseases
Susan Gerber	Chief, Respiratory Viruses Branch	Division of Viral Diseases, National Center for Immunization and Respiratory Diseases Centers for Disease Control and Prevention
Volker Gerdts	Director & CEO	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
Raul Gomez Roman	Preclinical Vaccine Scientist	CEPI
Paul Hodgson	Associate Director	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
Markus Hoffmann	Post-doctoral Scientist	Infection Biology Unit, German Primate Center, Leibniz Institute of Primate Research
Bart Haagmans,	Principal Investigator	Erasmus MC, Centre for Infectious Disease Control (RIVM) - Viroscience (EMC)



Rachel Ireland	Principal Scientist	CBR Division, Dstl porton Down
Daniel Jernigen	Director, Influenza Division, National Center for Immunization and Respiratory Diseases	Centers for Disease Control and Prevention
Jae-Ouk Kim	Head of Molecular Immunology	International Vaccine Institute (IVI)
Marion Koopmans	Head of the Erasmus MC department of Viroscience	Erasmus MC, Centre for Infectious Disease Control (RIVM) - Viroscience (EMC)
Hee-Young Lim		Korea Centers for Disease Control and Prevention
Kayvon Modjarrod	Director, Emerging Infectious Diseases Branch	Walter Reed Army Institute of Research
Vincent Munster	Chief, Virus Ecology Unit	Rocky Mountain Laboratory, National Institute of Allergy and Infectious Diseases
Scott Napper	Research Scientist	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
Michelle Nelson	Animal Model Development Lead	CBR Division, Dstl porton Down
Jo Prior	Medical countermeasures lead	CBR Division, Dstl porton Down



Gustavo Palacios	Director Directorate of Foundational Sciences	United States Army Medical Research Institute of Infectious Diseases
Stefan Pöhlmann	Head, Infection Biology Unit	German Primate Center, Leibniz Institute of Primate Research
Nicola Rose	Head of Viral Vaccines	Division of Virology NIBSC
Connie Schmaljohn	Chief Scientist and Director, Integrated Research Facility	National Institute of Allergy and Infectious Diseases
Zhengli Shi	Senior Scientist & Professor	Wuhan Institute of Virology, Chinese Academy of Sciences
Amy Shurtleff	Consulting Scientist	CEPI
Manki Song	Acting Deputy Director General of Science	International Vaccine Institute
Julia Tree	Research Scientist	Public Health England
Sylvie Van Der Werf		CNR des virus des infections respiratoires (dont la grippe) Unité de Génétique Moléculaire des Virus à ARN Institut Pasteur
LinFa Wang,	Professor & Director	Programme in Emerging Infectious Disease Duke-NUS Medical School



John Watson	Team leader, Respiratory Viruses Surveillance and Outbreak Support	Division of Viral Diseases, National Center for Immunization and Respiratory Diseases Centers for Disease Control and Prevention
Larry Wolfram	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
David Vaughn		Bill and Melinda Gates Foundation
Tianlei Ying		Fudan University

Guest participants:

Luc Gagnon, Greg Kulnis, Nexelis

WHO Secretariat

Pierre Gsell, Ximena Riveros-Balta

Objectives of the call

- To obtain an update of the status of development/availability of critical materials and reagents needed to formally evaluate cross-reactivity between SARS-CoV-2 and other coronaviruses in the laboratory
- To present any new data that has been generated which evaluates cross-reactivity
- Develop and standardize immune assays to support vaccine pre-clinical and clinical development

Administrative items



- The minutes for the last two calls were sent out for approval by the group. The intention is to post these on the WHO R&D Roadmap site.
- A new Sharepoint site will be established for the group where documents will be posted. This will include protocols of interest to the group. Minutes and other materials will also be shared with the animal models group.
- There is a call for proposals coming out from the Innovative Medicines Initiative – IMI2 call21 Coronavirus therapeutics and diagnostics <https://www.imi.europa.eu/apply-funding/open-calls/imi2-call-21>
- We want to mention relevant publications coming out, such as a pre-print from CDC <https://www.biorxiv.org/content/10.1101/2020.03.02.972935v1>

Updates on Status of Viruses and Reagents

Virus isolates

New isolates:

CDC has grown up 5 new isolates and the P2 are being sent to BEI. None of the sequences are very different from the Washington strain already in BEI, which will soon be submitted to BEI.

PHE has grown up a new strain from the UK and intends to deposit this into BEI.

CSIRO has 2 additional strains from Australia, which are growing well. They are working on MTA language for distribution, as these came out of public health labs and they need to coordinate.

Clint Florence from NIAID_DMID then talked about potential activities that BEI could perform related to SARS-CoV-2 stocks. He presented the following list:

- 1) Optimization/standardization of virus growth conditions (cell type [Vero E6, Vero SLAM, etc.], culture medium, harvest time, trypsin, freeze/thaw).
- 2) Optimization of plaque assay conditions (similar to efforts enacted with FANG FILO plaque assay).
- 3) Optimization of the TCID(50) assay conditions
- 4) Relationship between PFU/ml and TCID(50)/ml.
- 5) Sequence analysis of sequences of multiple passages to look for conditions that lead to tissue culture adaptation.
- 6) Optimization and evaluation of several inactivation methods to included confirmatory plaque, TCID(50), animal challenges, immunogenicity, integrity of RNA etc.
 - a. Gamma-Irradiation Conditions (i.e., source of radiation, exposure level).



- b. Heat Inactivation (i.e., dry heat)
- c. pH
- d. Chemical inactivation (i.e., 2-beta-Propiolactone)

The first variable is to decide which stock to use for this purpose. CDC mentioned that they have not seen differences in growth characteristics between their isolates. CSIRO mentioned that they were doing some bioinformatic analysis that they would be able to share when complete.

A question was asked about additional inactivation protocols for RNA extraction. CDC mentioned that they have protocols for MERS but that their biosafety group has stated that they must re-assess these for SARS-CoV-2. They are beginning to do this with standard buffers such as Qiagen AVL. Matt Frieman from Univ of MD stated that he has been asked to re-test whether 4% PFA inactivates virus when used for tissue fixation (CDC indicated that they have been asked to test this as well). Other chemicals to be assessed include Trizol and Formalin.

Neutralization assays

CDC gave some more details on their microneutralization assay, and are willing to post the protocol on the new sharepoint site. They are using Vero cells (ATCC CCL-81) in a 96 well format and are using TCID₅₀. They are seeing neutralization out to a 1:640 dilution.

The question was asked about the relationship between neutralization with live virus and a pseudoviruses. CDC relayed experience with a MERS VSV pseudovirion which was more sensitive to neutralization than live virus. There was not as much spike protein present on the surface of the pseudovirion compared to live virus. They are in the process of making a pseudovirus for SARS-CoV-2, but it is not yet ready,

The question was raised about performing high throughput assays. The organizers invited participation from Nexelis to discuss. They use pseudoviruses for other systems like flu, lentivirus constructs with GFP reporters. They run in a 96 well format and can run a large number of samples continuously on an automated platform.

NIBSC reported on their assay with lentivirus vectors with a luciferase reporter. They are testing which cell line is best for the assay and are using a SARS-CoV-1 convalescent sera to set up the assay conditions. They are making the plasmids available at the Centre for AIDS Reagents. They are also planning a VSV pseudovirus , also with a luciferase reporter.



The question was asked which spike protein sequences were used. NIBSC used a codon optimized Wuhan-1, the first sequence published. CDC and NIH VRC also used a codon optimized Wuhan-1. The NIH VRC have lentivirus and VSV pseudoviruses. They are still optimizing the process and will make plasmids available. PEI has lentiviral vectors with MERS, SARS-CoV-1 and SARS-CoV-2, also a codon optimized sequence. Mount Sinai also has a pseudovirus with a codon optimized Wuhan 1 Spike sequence. Theirs has been submitted to BEI already.

The question was asked about whether a method is needed for inactivation of serum samples, to be shipped to a proposed centralized facility. There was discussion on whether this would be needed due to the low amount of virus detected in serum, but some participants indicated that this would be needed to ship out of their facilities. To test a method, spiked serum samples could be used.

Convalescent serum and B cells from SARS-CoV-2 patients and mAbs

NIBSC has sent samples of SARS-CoV-1 and MERS serum to CDC.

Other assays

There was a question about assays to measure IgE, but there are none in progress. Nor are there T cell assays available yet.

There was a question about stability of virus in corpses. There were no others who reported looking at this question. There have been some environmental stability studies, but that was the closest.

Results and Planned experimental approaches regarding cross-reactivity

Mount Sinai has used an ELISA with the RBD with convalescent serum samples from other coronaviruses. The assays are very specific with no cross reactivity. Plasmids are available in BEI. Next they will test cross reactivity with Full Spike protein. They have both mammalian cell expressed (293 cells) or baculovirus. BEI has both versions available.

CDC has acute and convalescent sera from coronaviruses HKU1, OC43 and NL63. They will be testing these against full length Spike protein

Proposed next steps

- SARS-CoV-2 virus isolates are now available from multiple source and additional isolates will soon be available. There should be continued discussion of optimal



cell lines, growth conditions and assays to measure viral infectivity. There should also be analysis of sequences of multiple passages to look for conditions that lead to tissue culture adaptation. There is also a need for inactivated virus preparations.

- Multiple groups have reported binding of anti-SARS-CoV-1 antisera and mAbs with SARS-CoV-2 but these have low or no neutralizing activity with live virus or pseudovirions. Data should be shared as quickly as possible once it becomes available on future calls.
- Sera and B cells from SARS-CoV-2 patients are critically needed reagents. There should be continued effort to obtain B cells and sera from convalescing patients.
- Efforts to look at cross reactivity with other coronaviruses and these should be expanded.
- Continue to identify other participants for future calls who are generating these types of materials.

Attachment 1 – Summary table, filled in by the participants (note: some updates were sent after the call and contain additional information)

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT)
Sent: Thu, 21 May 2020 01:53:59 +0000
To: Stramer, Susan
Cc: Dodd, Roger; Grimm, Kacie E.; Saa, Paula; Helfand, Rita (CDC/DDID/NCEZID/OD); Gerber, Susan I. (CDC/DDID/NCIRD/DVD); Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP); Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR); Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE); Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP); Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD); Thornburg, Natalie (CDC/DDID/NCIRD/DVD); Schiffer, Jarad (CDC/DDID/NCIRD/DBD); Fry, Alicia (CDC/DDID/NCIRD/ID); Hall, Aron (CDC/DDID/NCIRD/DVD); Havers, Fiona (CDC/DDID/NCIRD/DBD); Reed, Carrie (CDC/DDID/NCIRD/ID); Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID)
Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – Yes, exactly, we will add 19 sites to the 6 sites included in serosurveillance under the REDS-IV-P RESPONSE study.

We have the preliminary list that you and Mike developed – I don't think it will change much but there may be some sites that are switched based on where we know we will have reliable local serosurveys to triangulate our data. We also want to compare blood donor demographics to overall population demographics at different sites to ensure racial/ethnic and age diversity is maximized, as well determine sites where donor demographics most closely resemble overall population demographics in order to pick 5 sites for oversampling. We will definitely be reaching out as this moves forward.

Thanks!
Monica

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Wednesday, May 20, 2020 9:16 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>
Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Never mind.... We are currently testing 6 sites and would then add 19 = 25; my error....

From: Stramer, Susan

Sent: Wednesday, May 20, 2020 9:09 PM

To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Cc: Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <lj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>

Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thanks; so 19 sites will be added to the 25 (I reviewed/selected the 25 sites with Mike)... 10/25 are existing ARC sites...

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Wednesday, May 20, 2020 4:23 PM

To: Stramer, Susan <Susan.Stramer@redcross.org>

Cc: Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <lj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>

Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

Thanks so much for sharing those links – it is definitely something we need to think about. CDC had its kick-off call with Vitalant today to review contractual elements and discuss next steps – Mike mentioned that universal antibody testing was being considered by some blood organizations.

A preliminary list of sites to be included has been drafted but hasn't been finalized – universal antibody testing will have to be taken into consideration when selecting the 19 sites to be added.

One of the action items identified in today's meeting was scheduling a meeting with participating blood organizations. We hope to organize this relatively quickly – but we may reach out to you in the meantime to get your thoughts on metro areas that would be good (or would not be good) to include.

We'll be in touch shortly – both for the ARC specimens being tested at CDC and for the seroprevalence study.

Thanks!
Monica

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Wednesday, May 20, 2020 8:56 AM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rzh7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>
Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thanks; related to the CDC award for seroprevalence in 25 metro areas, what is the impact of blood centers beginning to do universal antibody testing on all donations? This will become quite widespread and likely include all 25 metro areas covered in the CDC award.

<https://www.oneblood.org/>

<https://www.wbtv.com/2020/05/18/you-can-now-donate-blood-find-out-if-you-have-covid-antibody/>

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 19, 2020 3:31 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>
Cc: Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rzh7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID)

<lkg6@cdc.gov>

Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

Thanks for reaching out. The neutralization testing is in progress - we will definitely let you know as soon as that has been completed. Once we have results, we will set up a call.

The larger seroprevalence study with Vitalant was just awarded last week and will take some time before it's up and running. We're excited to be working with you again on that... and yes, we hope to have ARC results out before the larger seroprevalence study!

Thanks!
Monica

From: Stramer, Susan <Susan.Stramer@redcross.org>

Sent: Tuesday, May 19, 2020 3:19 PM

To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Cc: Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>

Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Greetings all; so where are we....

I assume that the plan is to complete and publish our findings prior to other seroprevalence studies that are planned....(and CDC and other federal partners are supporting).

<https://www.usnews.com/news/top-news/articles/2020-05-18/exclusive-cdc-plans-sweeping-covid-19-antibody-study-in-25-metropolitan-areas>

Are we going to have another call in the near future to discuss progress?

Thanks, Susan

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Tuesday, May 5, 2020 1:00 AM

To: Stramer, Susan <Susan.Stramer@redcross.org>; Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita

(CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>

Subject: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

All,

Thank you for a very productive call today. Please find attached notes from today's meeting. Please note that I did not include specific results in the notes as results are still preliminary and awaiting further confirmatory tests.

As discussed, the next steps for SARS-CoV-2 seroprevalence study of ARC blood donation specimens are as follows:

1. Confirmatory testing of screened reactive specimens collected during December–January to be completed in Natalie's lab. Natalie to send ARC results of confirmed reactive specimens.
2. Neutralization antibody testing to be performed by early next week on confirmed reactive specimens collected during December–January. Natalie to send ARC results of neutralization testing. Natalie will also send ID numbers to ARC to request additional aliquots needed for further neutralization testing.
3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
4. Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.
5. ARC sera already received from CA, OR, WA from March to undergo screening in Jarad's lab followed by confirmation in Natalie's lab.
6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,
Monica

Monica E Patton, MD

CDR, US Public Health Service
Burden and Severity Team, Epidemiology Task Force
2019 Novel Coronavirus Response
Centers for Disease Control and Prevention (CDC)
Mobile: (b)(6) WhatsApp: (b)(6)
gnh9@cdc.gov

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From: Stramer, Susan
Sent: Thu, 28 May 2020 13:41:44 +0000
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT)
Cc: Dodd, Roger; Grimm, Kacie E.; Saa, Paula; Helfand, Rita (CDC/DDID/NCEZID/OD); Gerber, Susan I. (CDC/DDID/NCEZID/DFWED); Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP); Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR); Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE); Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP); Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD); Thornburg, Natalie (CDC/DDID/NCIRD/DVD); Schiffer, Jarad (CDC/DDID/NCIRD/DBD); Fry, Alicia (CDC/DDID/NCIRD/ID); Hall, Aron (CDC/DDID/NCIRD/DVD); Havers, Fiona (CDC/DDID/NCIRD/DBD); Reed, Carrie (CDC/DDID/NCIRD/ID); Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID)
Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thanks; I will make time (my calendar is fairly full)..., but again, this is a priority; please avoid Wed and Thurs mid day... (dr appts).

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Thursday, May 28, 2020 9:38 AM
To: Stramer, Susan <Susan.Stramer@redcross.org>
Cc: Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCEZID/DFWED) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>
Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – Thanks for your email. Natalie is on leave this week so we will schedule a call for next week, but yes, she has made progress. They completed neutralization testing - 84 of the 90 reactive specimens had neutralizing activity against SARS-CoV-2.

Sridhar has started drafting a manuscript – we'll hopefully be able to share a draft with you soon.

Could you please let me know your availability next week?

Thanks!
Monica

Monica E Patton, MD
CDR, US Public Health Service

Burden and Severity Team, Epidemiology Task Force
2019 Novel Coronavirus Response
Centers for Disease Control and Prevention (CDC)
Mobile (b)(6) WhatsApp: (b)(6)
gnh9@cdc.gov

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Sent: Thursday, May 28, 2020 9:21 AM
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Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Greetings all; any progress? I would assume that our goal would be to get these data out in publication (pre-print) prior to the results from other blood donor seroprevalence studies (REDS/CDC).

Thanks, Susan

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Subject: RE: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

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Are we going to have another call in the near future to discuss progress?

Thanks, Susan

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 5, 2020 1:00 AM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>

Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>

Subject: [EXTERNAL] Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

All,

Thank you for a very productive call today. Please find attached notes from today's meeting. Please note that I did not include specific results in the notes as results are still preliminary and awaiting further confirmatory tests.

As discussed, the next steps for SARS-CoV-2 seroprevalence study of ARC blood donation specimens are as follows:

1. Confirmatory testing of screened reactive specimens collected during December–January to be completed in Natalie's lab. Natalie to send ARC results of confirmed reactive specimens.
2. Neutralization antibody testing to be performed by early next week on confirmed reactive specimens collected during December–January. Natalie to send ARC results of neutralization testing. Natalie will also send ID numbers to ARC to request additional aliquots needed for further neutralization testing.
3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
4. Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.
5. ARC sera already received from CA, OR, WA from March to undergo screening in Jarad's lab followed by confirmation in Natalie's lab.
6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,
Monica

Monica E Patton, MD

CDR, US Public Health Service
Burden and Severity Team, Epidemiology Task Force
2019 Novel Coronavirus Response
Centers for Disease Control and Prevention (CDC)
Mobile: (b)(6) /WhatsApp: (b)(6)
gnh9@cdc.gov

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CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

From: Thornburg, Natalie (CDC/DDID/NCIRD/DVD)
Sent: Thu, 7 May 2020 20:48:19 +0000
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD);Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD);Kuhnert-Tallman, Wendi (CDC/DDID/OD)
Subject: Re: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thanks all.

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From: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Sent: Thursday, May 7, 2020 4:47:36 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Forwarded this to Marla and Peter, we'll get them to Natalie when they show up.

Thanks,

Jarad

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Thursday, May 7, 2020 4:46 PM
To: Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Jarad,

These rush samples coming to you from the ARC are for Natalie to do microneuts. Please forward to her.

Thanks!

Jeff

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Sent: Thursday, May 7, 2020 4:42 PM
To: Grimm, Kacie E. <kacie.grimm@redcross.org>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>
Cc: Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Saa, Paula

<paula.saa@redcross.org>; Holley, Gary C. <Gary.Holley@redcross.org>; Townsend, Rebecca L. <Rebecca.Townsend@redcross.org>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Great, thanks for the information and we appreciate the quick turn-around in shipping the samples.
Michele

S. Michele Owen
CDC IMS LAB TF
2019 nCoV Response
mowen@cdc.gov
W 404 639-1046
C (b)(6)

From: Grimm, Kacie E. <kacie.grimm@redcross.org>

Sent: Thursday, May 7, 2020 4:30 PM

To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Saa, Paula <paula.saa@redcross.org>; Holley, Gary C. <Gary.Holley@redcross.org>; Townsend, Rebecca L. <Rebecca.Townsend@redcross.org>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Importance: High

Hello All,

The ARC has shipped that additional volume that was requested. Below is the FedEx tracking number for the shipment that will arrive tomorrow. Please let us know if you need anything else.

FedEx: 181089487600

Thanks,

Kacie Grimm
Associate, Scientific Affairs

American Red Cross
Scientific Support Office
9315 Gaither Road
Gaithersburg, MD 20877
301-795-4730 (P)
301-977-8163 (F)

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Wednesday, May 6, 2020 4:36 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

The shipping address is:

Centers for Disease Control and Prevention
Attn: Peter Browning
MPIR Unit
1600 Clifton Rd. NE
Atlanta, GA 30329-4027
Phone 404-639-3669
isk8@cdc.gov

Thanks!
Monica

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 3:35 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

If available, please provide 100 uL of the requested aliquots. We won't need any additional documentation if you use the same ARC ID numbers associated with the specimens.

Thank you,
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 3:24 PM
To: Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thanks!

From: Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>
Sent: Tuesday, May 5, 2020 3:22 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – N CA was 12 reactive and 23 retested. I could have mis-spoke, or was not clear about that (I was trying to say a point about the retest vs the reactives). Apologies.

All other numbers are correct.

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 3:19 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; these were the notes that I took yesterday:

N CA = 23/519
S CA = 11/702
OR/WA = 16/778 (all from Jan)

MA = 11/2062
WI = 17/1594
MI = 5/432

CT = 18/1580 (all from Jan)

Total = 101....

Thanks, Susan

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 5, 2020 3:05 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – We only have 90 confirmed reactive specimens thus far out of 208 screened reactive specimens. Some confirmatory testing is ongoing in Natalie’s lab – we will definitely let you know if/when we have additional confirmed reactive specimens.

Thanks,
Monica

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 2:03 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; thanks for the list; I asked the lab to find the samples and aliquot/send them ASAP. Is there any special paperwork that needs to accompany them (50-100uL of each)? Does Kacie use the same address as before?

And there are 90 in the list that you sent, but there were 101 that were listed as “confirmed” reactive so far; what about the other 11? If you don’t need extra volume of those, can you send me the sample IDs just so that I have a listing of reactivities to date?

Thanks, Susan

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 1:25 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Stramer, Susan <Susan.Stramer@redcross.org>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Monica and Susan,

Regarding the neut testing in bullets 2 and 3, the response leadership has expressed urgency in completing that testing and asked if sending those additional volumes (specimen list attached) could be expedited. Could you provide a time estimate on shipping those to CDC?

Thank you,
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Tuesday, May 5, 2020 1:00 AM

To: Stramer, Susan <Susan.Stramer@redcross.org>; Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <lkg6@cdc.gov>

Subject: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

All,

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As discussed, the next steps for SARS-CoV-2 seroprevalence study of ARC blood donation specimens are as follows:

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2. Neutralization antibody testing to be performed by early next week on confirmed reactive specimens collected during December–January. Natalie to send ARC results of neutralization testing. Natalie will also send ID numbers to ARC to request additional aliquots needed for further neutralization testing.
3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.

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5. ARC sera already received from CA, OR, WA from March to undergo screening in Jarad's lab followed by confirmation in Natalie's lab.
6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,
Monica

Monica E Patton, MD

CDR, US Public Health Service
Burden and Severity Team, Epidemiology Task Force
2019 Novel Coronavirus Response
Centers for Disease Control and Prevention (CDC)
Mobile: (b)(6) /WhatsApp: (b)(6)
gnh9@cdc.gov

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From: Stramer, Susan
Sent: Wed, 6 May 2020 12:27:44 +0000
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT)
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD); Thornburg, Natalie (CDC/DDID/NCIRD/DVD); Grimm, Kacie E.; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR); Havers, Fiona (CDC/DDID/NCIRD/DBD); Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP); Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thank you.... The numbers provided on the call were correct; my notes had the numbers in the wrong place.....

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 5, 2020 3:22 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – 23 were screened positive in N California, but only 12 were confirmed reactive.

I'll confirm shipping information shortly.

Thanks!!
Monica

From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 3:19 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; these were the notes that I took yesterday:

N CA = 23/519
S CA = 11/702
OR/WA = 16/778 (all from Jan)

MA = 11/2062
WI = 17/1594
MI = 5/432
CT = 18/1580 (all from Jan)

Total = 101....

Thanks, Susan

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 5, 2020 3:05 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>
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From: Stramer, Susan <Susan.Stramer@redcross.org>
Sent: Tuesday, May 5, 2020 2:03 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; thanks for the list; I asked the lab to find the samples and aliquot/send them ASAP. Is there any special paperwork that needs to accompany them (50-100uL of each)? Does Kacie use the same address as before?

And there are 90 in the list that you sent, but there were 101 that were listed as “confirmed” reactive so far; what about the other 11? If you don’t need extra volume of those, can you send me the sample IDs just so that I have a listing of reactives to date?

Thanks, Susan

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 1:25 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Stramer, Susan

<Susan.Stramer@redcross.org>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Monica and Susan,

Regarding the neut testing in bullets 2 and 3, the response leadership has expressed urgency in completing that testing and asked if sending those additional volumes (specimen list attached) could be expedited. Could you provide a time estimate on shipping those to CDC?

Thank you,
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 5, 2020 1:00 AM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Dodd, Roger <Roger.Dodd@redcross.org>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Saa, Paula <paula.saa@redcross.org>; Helfand, Rita (CDC/DDID/NCEZID/OD) <rz7@cdc.gov>; Gerber, Susan I. (CDC/DDID/NCIRD/DVD) <bhx1@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jj6@cdc.gov>; Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Schiffer, Jarad (CDC/DDID/NCIRD/DBD) <aku3@cdc.gov>; Fry, Alicia (CDC/DDID/NCIRD/ID) <agf1@cdc.gov>; Hall, Aron (CDC/DDID/NCIRD/DVD) <esg3@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Reed, Carrie (CDC/DDID/NCIRD/ID) <ggj2@cdc.gov>; Grohskopf, Lisa A. (CDC/DDID/NCIRD/ID) <kg6@cdc.gov>
Subject: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

All,

Thank you for a very productive call today. Please find attached notes from today's meeting. Please note that I did not include specific results in the notes as results are still preliminary and awaiting further confirmatory tests.

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3. ARC to send CDC additional aliquots as requested by CDC for additional neutralization antibody testing in addition to 575 plasma specimens from Oregon and all plasma specimens from Ozark (AR/MO) as example of low prevalence, rural region.
4. Matt Sapiano, CDC statistician, to reach out to Kacie Grimm at ARC for more information about how/which specimens were requested for archival, information about blood drives, and summary of donor demographics (age, sex, state of residence) for ARC regions included in the study.
5. ARC sera already received from CA, OR, WA from March to undergo screening in Jarad's lab followed by confirmation in Natalie's lab.
6. Set up another phone call to discuss results when available.

Please reach out if you find any errors or need further information from me.

Thanks,
Monica

Monica E Patton, MD

CDR, US Public Health Service

Burden and Severity Team, Epidemiology Task Force

2019 Novel Coronavirus Response

Centers for Disease Control and Prevention (CDC)

Mobile: (b)(6) /WhatsApp: (b)(6)

gnh9@cdc.gov

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From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT)
Sent: Tue, 5 May 2020 19:53:58 +0000
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

(b)(5)

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 3:53 PM
To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Monica,

(b)(5)

Thanks!
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Sent: Tuesday, May 5, 2020 3:47 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Jeff

(b)(5)

(b)(5)

Thanks,
Monica

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, May 5, 2020 3:35 PM
To: Stramer, Susan <Susan.Stramer@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>
Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP)

[<etu7@cdc.gov>](mailto:etu7@cdc.gov)

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan,

If available, please provide 100 uL of the requested aliquots. We won't need any additional documentation if you use the same ARC ID numbers associated with the specimens.

Thank you,
Jeff

Jeff Johnson
Study Section Lead, IMS Lab Task Force
2019 nCoV Response
CDC

From: Stramer, Susan <Susan.Stramer@redcross.org>

Sent: Tuesday, May 5, 2020 3:24 PM

To: Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Thanks!

From: Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>

Sent: Tuesday, May 5, 2020 3:22 PM

To: Stramer, Susan <Susan.Stramer@redcross.org>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – N CA was 12 reactive and 23 retested. I could have mis-spoke, or was not clear about that (I was trying to say a point about the retest vs the reactives). Apologies.

All other numbers are correct.

From: Stramer, Susan <Susan.Stramer@redcross.org>

Sent: Tuesday, May 5, 2020 3:19 PM

To: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie

(CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Ok; these were the notes that I took yesterday:

N CA = 23/519

S CA = 11/702

OR/WA = 16/778 (all from Jan)

MA = 11/2062

WI = 17/1594

MI = 5/432

CT = 18/1580 (all from Jan)

Total = 101....

Thanks, Susan

From: Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>

Sent: Tuesday, May 5, 2020 3:05 PM

To: Stramer, Susan <Susan.Stramer@redcross.org>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>; Sapiano, Mathew (CDC/DDID/NCEZID/DHQP) (CTR) <lof6@cdc.gov>; Havers, Fiona (CDC/DDID/NCIRD/DBD) <wja7@cdc.gov>; Basavaraju, Sridhar (CDC/DDID/NCEZID/DHQP) <etu7@cdc.gov>

Subject: RE: [EXTERNAL] RE: Notes from 5.4.20 call -- SARS-CoV-2 seroprevalence among ARC specimens

Hi Susan – We only have 90 confirmed reactive specimens thus far out of 208 screened reactive specimens. Some confirmatory testing is ongoing in Natalie’s lab – we will definitely let you know if/when we have additional confirmed reactive specimens.

Thanks,
Monica

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Sent: Tuesday, May 5, 2020 2:03 PM

To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>

Cc: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Patton, Monica E. (CDC/DDPHSIS/CGH/DGHT) <gnh9@cdc.gov>; Thornburg, Natalie (CDC/DDID/NCIRD/DVD) <nax3@cdc.gov>; Grimm, Kacie E. <kacie.grimm@redcross.org>

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2019 nCoV Response
CDC

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Monica E Patton, MD

CDR, US Public Health Service
Burden and Severity Team, Epidemiology Task Force
2019 Novel Coronavirus Response
Centers for Disease Control and Prevention (CDC)
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gnh9@cdc.gov

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From: service05@bio.sanyoubio.com on behalf of "sanyoubio"
<service@sanyoubio.com>
Sent: Mon, 20 Apr 2020 19:44:46 +0800
To: Carroll, Darin (CDC/DDID/NCEZID/OD)
Subject: SARS-CoV-2 Proteins and Antibodies Series: Paired anti-SARS-CoV-2 mAbs for virus detection

Dear Professor,

Highly sensitive anti-SARS-CoV-2 IgG/IgM antibody test and virus antigen test play fundamental role to understand the virus and to provide therapeutic solution to this serious COVID-19 epidemic. The challenge is to find reliable and stable materials, including paired antibodies required for the sandwich immunoassays. Fortunately, we have discovered and verified several pairs of anti-SARS-CoV-2 S1 and S1-RBD antibodies and made them available to the investigators around the world.

The first generation of paired mAbs were sent to different labs for testing in early March. The two pairs of antibodies (Cat#: AHA001 and AHA003, AHA003 and AHA004) can bind to the SARS-CoV-2 S1-RBD protein simultaneously with EC50 values of 0.88 nM and 1.16 nM respectively. Now we have identified the second generation of paired mAbs. These two new antibodies show high affinity to S1-RBD protein with EC50 of 0.56nM and 0.76nM respectively, and the EC50 value using Sandwich method is 0.23nM.

Ultra High Affinity SRAS-CoV-2 Paired Human mAbs:

The Second Generation of Paired mAbs				
Cat#	Name	Species	Subtype/Label	Expression System

AHA013	Anti-Spike-RBD human mAb (IgG)	Human	huIgG1	CHO
AHA014	Anti-Spike-RBD human mAb (IgG)	Human	huIgG1	CHO
The First Generation of Paired mAbs				
AHA001	Anti-Spike-RBD human mAb (IgG)	Human	huIgG1	CHO
AHA003	Anti-Spike-RBD human mAb (IgG)	Human	huIgG1	CHO
AHA004	Anti-Spike-RBD human mAb (IgG)	Human	huIgG1	CHO

More High Quality SARS-CoV-2 Proteins and mAbs:

Since February 22nd, Sanyou Bio has launched a full bundle of SARS-CoV-2 proteins and antibodies to serve hundreds of research institutions and immunodiagnostic companies around the world. Please leave a message to us (service@sanyoubio.com) for a collaborative effort to fight the disease.

	Cat#	Name	Species	Subtype/Label	Expression System
Protein	PNA001	SARS-CoV-2 Spike S1	SARS-CoV-2	Fc	HEK293

		Protein (Fc Tag)			
	PNA002	SARS-CoV-2 Spike S1 Protein (His Tag)	SARS-CoV-2	His	HEK293
	PNA003	SARS-CoV-2 Spike RBD Protein (Fc Tag)	SARS-CoV-2	Fc	HEK293
	PNA004	SARS-CoV-2 Spike RBD Protein (His Tag)	SARS-CoV-2	His	HEK293
	PNA005	SARS-CoV-2 Nucleocapsid Protein (His Tag)	SARS-CoV-2	His	E.coli
	PNA006	SARS-CoV-2 Nucleocapsid Protein (His Tag)	SARS-CoV-2	His	HEK293

	PHA001	Human ACE2 Protein (Fc Tag)	human	Fc	HEK293
	PHA002	Human ACE2 Protein (His Tag)	human	His	HEK293
	PMA001	Mouse ACE2 Protein (Fc Tag)	mouse	Fc	HEK293
Antibody	AHA005	Anti-Spike-RBD human mAb (Ig M)	Human	huIgM	CHO
	ANA001	Anti-Spike-RBD single domain mAb	Alpaca	VHH-huFc	CHO
	ANA002	Anti-Spike-RBD	Alpaca	VHH-huFc	CHO

		single domain mAb			
	ANA003	Anti-Spike-RBD single domain mAb	Alpaca	VHH-huFc	CHO
	ANA004	Anti-Spike-RBD single domain mAb	Alpaca	VHH-huFc	CHO
	AHA006	Anti-Nprotein human mAb (IgG) mAb	Human	huIgG1	CHO
	AHA009	Anti-Nprotein human mAb (IgG)	Human	huIgG1	CHO
	AHA015	Anti-N protein	Human	huIgG1	CHO

		human mAb (Ig M)			
	AHA016	Anti-N protein human mAb (Ig M)	Human	huIgG1	CHO
	AHA007	Anti-ACE2 human mAb (IgG)	Human	huIgG1	CHO

Sanyou Bio also provides customized protein and antibody services according to your personalized requirements.

You can click the following link for more details:

<https://www.sanyoubio.com/EN/2019-nCoV.php>

More protein and antibody customized service for your reference:

Service Type	Raw Material Preparation	Lead Antibody Generation	Antibody Engineering
Service Name	<ul style="list-style-type: none"> ▶ Protein ▶ Antibody Expression ▶ Cell Line 	<ul style="list-style-type: none"> ▶ Mouse mAbs ▶ Human mAbs ▶ Single Domain mAbs 	<ul style="list-style-type: none"> ▶ Humanization ▶ Affinity Maturation
Service Type	Functional Screening	Animal Model Screening	Cell Line Construction
Service Name	<ul style="list-style-type: none"> ▶ Functional Assay ▶ Systemic <i>In Vitro</i> Efficacy Evaluation ▶ Physicochemical Analysis 	<ul style="list-style-type: none"> ▶ Animal Models 	<ul style="list-style-type: none"> ▶ Cell Line Development

You could click on the service name in the table and get detailed information.

Sanyou Biopharmaceuticals Co., Ltd.

Website : www.sanyoubio.com

Email : service@sanyoubio.com

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From: William Dowling
Sent: Wed, 18 Mar 2020 12:45:55 +0000
To: cheryl@gisaid.org;Holbrook, Michael (NIH/NIAID) [C];Hensley, Lisa (NIH/NIAID) [E];rbaric@email.unc.edu;HENAO RESTREPO, Ana Maria;GSELL, Pierre;COSTA, Alejandro Javier;RIVEROS BALTA, Alina Ximena;Munster, Vincent (NIH/NIAID) [E];daszak@ecohealthalliance.org;b.haagmans@erasmusmc.nl;Vasan, Vasan (H&B, Geelong AAHL);linfa.wang@duke-nus.edu.sg;jokim@ivi.int;mksong@ivi.int;Volker.gerdt@usask.ca;Giada.Mattiuzzo@nibsc.org;zlishi@wh.iov.cn;Barbara.Schnierle@pei.de;leejooyeon@korea.kr;limhy0919@korea.kr;Damon, Inger K. (CDC/DDID/NCEZID/DHCPP);christian.brechot;Kayvon Modjarrad;Amy C. Shurtleff;Stemmy, Erik (NIH/NIAID) [E];Julia.Tree@phe.gov.uk;Mark Page;Graham, Barney (NIH/VRC) [E];Falzarano, Darryl;Thue, Tracey;Hodgson, Paul;Napper, Scott;Nicola Rose;M.P.G. Koopmans;sgerber@cdc.gov;Jernigan, Daniel B. (CDC/DDID/NCIRD/ID);Gerber, Susan I. (CDC/DDID/NCIRD/DVD);Carroll, Darin (CDC/DDID/NCEZID/OD);Watson, John (CDC/DDID/NCIRD/DVD);Lathey, Janet (NIH/NIAID) [E];Degrace, Marciela (NIH/NIAID) [E];SATHIYAMOORTHY, Vaseeharan;gustavo.f.palacios.civ@mail.mil;Pallansch, Mark A. (CDC/DDID/NCIRD/DVD);MFrieman@som.umaryland.edu;REIRELAND@mail.dstl.gov.uk;SPoehlmann@dpz.eu;mhoffmann@dpz.eu;sylvie.van-der-werf@pasteur.fr;Nelson Michelle;Lever Steve;Prior Joann L;Marston, Hilary (NIH/NIAID) [E];De wit, Emmie (NIH/NIAID) [E];mit666666@pitt.edu;Mellors, John W;tlying@fudan.edu.cn;christian.drosten@charite.de;David Vaughn;Jacqueline Kirchner;Karen Makar;florian.krammer@mssm.edu;perkinsm@who.int;Guthrie, Erica (CDC/DDID/NCIRD/ID);Thornburg, Natalie (CDC/DDID/NCIRD/DVD);Baric, Toni C;SALAMI, Kolawole;Simon Funnell;Cesar Munoz-fontela;Monalisa Chatterji;Smith, Ashley (OS/ASPR/BARDA);Erlandson, Karl (OS/ASPR/BARDA);Kovacs, Gerald (OS/ASPR/BARDA) (CTR);Little, James (OS/ASPR/BARDA);Jayashankar, Lakshmi (OS/ASPR/BARDA);wilsonp@uchicago.edu;Florence, Clint (NIH/NIAID) [E];Delgado Vazquez.Rafael
Cc: Morabito, Kaitlyn (NIH/VRC) [E]
Subject: WHO Consultation on SARS-CoV -2 Reagents, Cross reactivity and immune Assays - Wed 2 PM CET
Attachments: Agenda 18 March 2020 call.docx

Hello all

Attached is an agenda for todays call.

You may have already received this , but below is a link to the sharepoint site.

<https://teams.microsoft.com/?tenantId=f610c0b7-bd24-4b39-810b-3dc280afb590#/conversations/General?threadId=19:327f882deaf24af78177b48f64c46527@thread.tacv2&ctx=channel>

Please let me know if there are issues accessing the site.

Right now, there are minutes from each meeting there. There is a new table in a more detailed format that I just began to fill in, but I would appreciate if you could update it as well. We can also add protocols and publications here.

Please keep in mind that you can edit but also delete, so please don't delete anything!

Thanks

Bill

William Dowling, PhD

Non-Clinical Vaccine Development Leader



(+1) 202 800-3148 (o)

(+1) (b)(6) (m)

William.dowling@cepi.net

1901 Pennsylvania Ave, NW, Suite 1003, Washington, DC 20006 USA

www.cepi.net



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WHO *ad hoc* working group on COVID-19 Assays and development
Agenda for 18 MAR 2020

1. **Propagation and virus stocks**
 - a. Updates BEI , EVAg; other stocks in preparation
 - b. Standardizing growth conditions and assays
2. **Decontamination protocols**
 - a. Inactivated virus as vaccine control
 - b. Sera --new publication from China regarding heat inactivation
 - c. PCR buffers
 - d. Other applications
3. **Serology**
 - a. Updates on patient sera and PBMCs
 - b. Updates on ELISA and PRNT (virus and pseudovirion)
 - c. Updates on cross reactivity results
 1. Assays to differentiate between SARS-CoV-2, SARS-CoV-1, MERS-CoV and other coronaviruses
 - d. Plans for centralized testing labs, validation panels
 - e. Assay for pre screening of animals for coronavirus reactivity
4. **Flow assays** (Cesar)
5. **T cell assays** –
 - a. ELISpots
6. **New WHO International serological survey working group**
7. **Next meeting**

Wednesday 25th March at 14:00 CET (Geneva time)

From: William Dowling
Sent: Wed, 4 Mar 2020 09:34:19 +0000
To: cheryl@gisaid.org;peter@gisaid.org;Carolyn Clark;Florence, Clint (NIH/NIAID) [E];Wolfram, Larry (NIH/NIAID) [E];Raul Gomez Roman;Miles.Carroll@phe.gov.uk;barney.graham@nih.gov;Schmaljohn, Connie (NIH/NIAID) [E];Holbrook, Michael (NIH/NIAID) [C];Hensley, Lisa (NIH/NIAID) [E];rbaric@email.unc.edu;HENAO RESTREPO, Ana Maria;GSELL, Pierre;COSTA, Alejandro Javier;RIVEROS BALTA, Alina Ximena;Munster, Vincent (NIH/NIAID) [E];daszak@ecohealthalliance.org;b.haagmans@erasmusmc.nl;Vasan, Vasan (H&B, Geelong AAHL;linfa.wang@duke-nus.edu.sg;jokim@ivi.int;mksong@ivi.int;Volker.gerds@usask.ca;Giada.Mattiuzzo@nibsc.org;zlishi@wh .iov.cn;Barbara.Schnierle@pei.de;leejooyeon@korea.kr;limhy0919@korea.kr;Damon, Inger K. (CDC/DDID/NCEZID/DHCPP);christian.brechot;Kayvon Modjarrad;Amy C. Shurtleff;Stemmy, Erik (NIH/NIAID) [E];Julia.Tree@phe.gov.uk;Mark Page;Graham, Barney (NIH/VRC) [E];Falzarano, Darryl;Thue, Tracey;Hodgson, Paul;Napper, Scott;Nicola Rose;M.P.G. Koopmans;sgerber@cdc.gov;Jernigan, Daniel B. (CDC/DDID/NCIRD/ID);Gerber, Susan I. (CDC/DDID/NCIRD/DVD);Carroll, Darin (CDC/DDID/NCEZID/OD);Watson, John (CDC/DDID/NCIRD/DVD);Lathey, Janet (NIH/NIAID) [E];Degrace, Marciela (NIH/NIAID) [E];SATHIYAMOORTHY, Vaseeharan;gustavo.f.palacios.civ@mail.mil;Pallansch, Mark A. (CDC/DDID/NCIRD/DVD);MFrieman@som.umaryland.edu;REIRELAND@mail.dstl.gov.uk;SPoehlmann@dpz.eu;mhoffmann@dpz.eu;sylvie.van-der-werf@pasteur.fr;Nelson Michelle;Lever Steve;Prior Joann L;Marston, Hilary (NIH/NIAID) [E];De wit, Emmie (NIH/NIAID) [E];mit666666@pitt.edu;Mellors, John W;tlying@fudan.edu.cn;christian.drosten@charite.de;David Vaughn;Jacqueline Kirchner;Karen Makar;florian.krammer@mssm.edu;perkinsm@who.int
Cc: Guthrie, Erica (CDC/DDID/NCIRD/ID);Thornburg, Natalie (CDC/DDID/NCIRD/DVD);Baric, Toni C;SALAMI, Kolawole;Simon Funnell;Cesar Munoz-fontela;Monalisa Chatterji;Greg Kulnis;Luc Gagnon
Subject: WHO Consultation on SARS-CoV -2 Reagents, Cross reactivity and immune Assays - Wed 3 PM CET
Attachments: RD Blueprint lab expert group cross-reactivity call Feb 27 2020.docx, RD Blueprint lab expert group cross-reactivity call Feb 18 2020.docx

Hello all

Attached are the minutes from the last two calls. Please take a look. If there are any edits please let me know

The intention is to post these , and minutes from our past calls, on the WHO website. If there are any edits or redactions you would like us to make, please let us know by Friday.

Thanks
Bill

William Dowling, PhD

Non-Clinical Vaccine Development Leader

(+1) 202 800-3148 (o)

(+1) (b)(6) (m)

William.dowling@cepi.net

1901 Pennsylvania Ave, NW, Suite 1003, Washington, DC 20006 USA

www.cepi.net



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**World Health
Organization**

WHO R&D Blueprint COVID-1

**Prospects for evaluating cross-reactivity of
SARS-CoV-2 with SARS-CoV-1**

**February 27, 2020
Geneva, Switzerland**



R&D Blueprint

Powering research
to prevent epidemics



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DRAFT



Participants

Members of the R&D Blueprint Cross-Reactivity expert group

Name	Position	Institutional Affiliation
Carolyn Clark	Scientist	CEPI
William Dowling	Non-Clinical Vaccine Development Leader	CEPI (seconded to WHO)
Darryl Falzarano	Research Scientist	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
William Florence	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Simon Funnell	Scientific Leader	Public Health England (Seconded to WHO)
Raul Gomez Roman	Preclinical Vaccine Scientist	CEPI
Barney Graham	Deputy Director, Chief, Viral Pathogenesis Laboratory and Translational Science Core	Vaccine Research Center, National Institute of Allergy and Infectious Diseases
Erica Guthrie		Centers for Disease Control and Prevention
Bart Haagmans,	Principal Investigator	Erasmus MC, Centre for Infectious Disease Control (RIVM) - Viroscience (EMC)



Name	Position	Institutional Affiliation
Lisa Hensley	Associate Director, Integrated Research Facility	National Institute of Allergy and Infectious Diseases
Paul Hodgson	Associate Director	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
Rachel Ireland	Principal Scientist	CBR Division, Dstl porton Down
Marion Koopmans	Head of the Erasmus MC department of Viroscience	Erasmus MC, Centre for Infectious Disease Control (RIVM) - Viroscience (EMC)
Janet Lathey	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Florian Krammer	Professor	Microbiology Department, Icahn School of Medicine at Mount Sinai
Karen Makar		Bill and Melinda Gates Foundation
Giada Mattiuzzo	Senior Scientist	National Institute for Biological Standards and Control
César Muñoz-Fontela	Professor	Bernard-Nocht-Institut für Tropenmedizin (seconded to WHO)



Name	Position	Institutional Affiliation
Michelle Nelson	Animal Model Development Lead	CBR Division, Dstl porton Down
Jo Prior	Medical countermeasures lead	CBR Division, Dstl porton Down
Barbara Schnierle	Head of AIDS, New and Emerging Pathogens Section)	Paul Ehrlich Institut
Amy Shurtleff	Consulting Scientist	CEPI
Erik Stemmy	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Natalie Thornburg	Team Leader, Respiratory viruses immunology	Division of Viral Diseases, National Center for Immunization and Respiratory Diseases Centers for Disease Control and Prevention
Larry Wolfram	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Seshadri Vasan	Senior Principal Research Consultant Team Leader - Dangerous Pathogens	<i>CSIRO Health & Biosecurity</i>
David Vaughn		Bill and Melinda Gates Foundation



Experts invited but unable to attend

Name	Position	Institutional Affiliation
Ralph Baric	William R. Kenan, Jr. Distinguished Professor Professor	Department of Epidemiology Department of Microbiology and Immunology University of North Carolina
Karin Bok	Senior Advisor Vaccine Development,	Vaccine Research Center, National Institute of Allergy and Infectious Diseases
Christian Bréchet	President Professor Dept of Internal Medecine and Senior Associate Dean for Research in Global Affairs; Associate Vice-President for International Partnerships and Innovation Senior adviser Emeritus Professor Former President	Global Virus Network University of South Florida Romark Laboratory LC, Tampa, Florida, USA Paris-Descartes University, Paris Institut Pasteur
Darin Carroll	Poxvirus and Rabies Branch	National Center for Emerging and Zoonotic Infectious Diseases , Centers for Disease Control and Prevention , Centers for Disease Control and Prevention
Miles Carroll	Deputy Director	National Infections Service Public Health England



	Head of Research & Development Institute	
Inger Damon	Director, Division of High Consequence Pathogens and Pathology	Centers for Disease Control and Prevention
Peter Daszak	President	EcoHealth Alliance
Marciela De Grace	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
Emmie de Wit	Chief, Molecular Pathogenesis Unit	Rocky Mountain Laboratory, National Institute of Allergy and Infectious Diseases
Matthew Frieman	Associate Professor	Institute of Human Virology, University of Maryland
Susan Gerber	Chief, Respiratory Viruses Branch	Division of Viral Diseases, National Center for Immunization and Respiratory Diseases Centers for Disease Control and Prevention
Volker Gerdtz	Director & CEO	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
Markus Hoffmann	Post-doctoral Scientist	Infection Biology Unit, German Primate Center, Leibniz Institute of Primate Research



Mike Holbrook	High Containment Supervisor, Integrated Research Facility	National Institute of Allergy and Infectious Diseases
Daniel Jernigen	Director, Influenza Division, National Center for Immunization and Respiratory Diseases	Centers for Disease Control and Prevention
Jae-Ouk Kim	Head of Molecular Immunology	International Vaccine Institute (IVI)
Steve Lever	Virology Lead	CBR Division, Dstl porton Down
Hee-Young Lim		Korea Centers for Disease Control and Prevention
Kayvon Modjarrod	Director, Emerging Infectious Diseases Branch	Walter Reed Army Institute of Research
Vincent Munster	Chief, Virus Ecology Unit	Rocky Mountain Laboratory, National Institute of Allergy and Infectious Diseases
Scott Napper	Research Scientist	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
Mark Page	Principal Scientist	Division of Virology National Institute for Biological Standards and Control
Gustavo Palacios	Director Directorate of Foundational Sciences	United States Army Medical Research Institute of Infectious Diseases



Mark Pallansch	Director, Division of Viral Diseases	National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention
Stefan Pöhlmann	Head, Infection Biology Unit	German Primate Center, Leibniz Institute of Primate Research
Nicola Rose	Head of Viral Vaccines	Division of Virology NIBSC
Connie Schmaljohn	Chief Scientist and Director, Integrated Research Facility	National Institute of Allergy and Infectious Diseases
Zhengli Shi	Senior Scientist & Professor	Wuhan Institute of Virology, Chinese Academy of Sciences
Manki Song	Acting Deputy Director General of Science	International Vaccine Institute
Julia Tree	Research Scientist	Public Health England
LinFa Wang,	Professor & Director	Programme in Emerging Infectious Disease Duke-NUS Medical School
John Watson	Team leader, Respiratory Viruses Surveillance and Outbreak Support	Division of Viral Diseases, National Center for Immunization and Respiratory Diseases Centers for Disease Control and Prevention
Sylvie Van Der Werf		CNR des virus des infections respiratoires (dont la grippe) Unité de Génétique Moléculaire des Virus à ARN



		Institut Pasteur
Tianlei Ying		Fudan University

WHO Secretariat

Pierre Gsell

Objectives of the call

- To obtain an update of the status of development/availability of critical materials and reagents needed to formally evaluate cross-reactivity between SARS-CoV-2 and SARS in the laboratory
- To present any new data that has been generated which evaluates cross-reactivity and to outline planned experimental approaches that will inform on vaccine and monoclonal antibody selection and thus advance development timelines

Updates on Status of Viruses and Reagents

Virus isolates

CDC has grown up several new isolates out to P3, which will soon be submitted to BEI. One isolate (California 6) has an in frame deletion in ORF1A. This one will also go to BEI. All the isolates have similar CPE and grow to similar titers.

CSIRO has several new samples and are trying to culture virus from them.

PHE discussed the culture conditions they have employed. They have grown the Victoria 1 isolate in Vero SLAM cells but titered it in Vero E6. This is because it has notable doughnut morphology in SLAMs which is not helpful in a plaque assay. They also found no benefit using trypsin.

CDC discussed had used several lines ; Vero and VeroE6 were best; roughly equivalent. HUH7 (2 logs lower titer and poor CPE), A549 (not productive), 293T (very low titer, 2 logs lower than HUH7); and a bat cell line, in which the virus did not grow. All growth was in absence of trypsin.

There was a question about freeze thaw. CDC does a freeze/thaw step followed by clarification of the supernatant. They are testing to see if they can harvest without the freeze thaw



There was a question from NIBSC about inactivation protocols, as they would like an inactivated virus standard. CDC has been using Gamma irradiation using a Cobalt source. They use between 1 and 5 Mrad. This leaves the RNA intact. It was stated that BEI will make a reference panel with inactivated virus. There was a question about a method that will leave the viral structure intact to use as a control for studies of enhanced disease in vaccinated animals. CDC was not sure if irradiation affected the immunogenicity because that has not been tried. Other techniques will be tried in future. CDC does not have the personnel or space to prepare large batches of inactivated material. DMID will check with BEI about this task.

There was then a question on whether SARS-CoV-2 will be considered a Select Agent. CDC replied that it has not been so far.

Recombinant viruses

There were no updates on recombinant viruses.

Recombinant Spike proteins and pseudovirions

Mt. Sinai has recombinant RBD and the plasmid that encodes this. Both are in BEI. They have baculovirus produced full length stabilized Spike and RBD ; They are also making a pseudovirion,

Convalescent serum and B cells from SARS-CoV-2 patients and mAbs

CDC said that they have some sera and PBMCs from COVID-19 patients. There are no large volumes yet and very few labs have received any. They have only recruited a small number of volunteers thus far, They are trying to get the consent forms to volunteers as they go into quarantine.

Erasmus has small volumes of serum.

NIBSC is recruiting UK patients – samples expected in 2-3 weeks.

There was a discussion about SAB human IgG from a transchromosomal bovine system. This is being pursued by several groups and could be a useful standard.

Results and Planned experimental approaches regarding cross-reactivity

CDC developed a microneutralization assay with their first SARS-CoV-2 strain. SARS-CoV 2 patient sera neutralized at a 1:640 dilution, convalescent sera from a SARS CoV 1 survivor neutralized at a 1:320 dilution and sera from a MERS CoV patient at 1:160.



Based on this result , the question was asked whether SABs MERS IgG might be useful as an interim standard. CDC said they intend to try it.

The Bill and Melinda Gates Foundation (BMGF) is tech-transferring the VRC ELISA using stabilized full length S to a CRO. This CRO would be a centralized testing lab.

In addition to their ELISA, the NIAID VRC have developed neutralization assays with VSV and lentivirus. Anti-SARS-CoV-1 mAbs that bind to the S protein were tested and 1 Of 10 had neutralizing activity, but at low titer. SARS-CoV-1 human convalescent sera also neutralize , but again at much lower titer.

Erasmus are testing human samples with their ELISA and a commercial test developed by EUROIMMUN to compare them.

They are also using their protein array to look at cross reactivity with other human coronaviruses

Proposed next steps

- SARS-CoV-2 virus isolates are now available from multiple source and additional isolates will soon be available. There should be continued discussion of optimal cell lines, growth conditions and assays to measure viral infectivity. There should also be analysis of sequences of multiple passages to look for conditions that lead to tissue culture adaptation. There is also a need for inactivated virus preparations.
- Multiple groups have reported binding of anti-SARS-CoV-1 antisera and mAbs with SARS-CoV-2 but these have low or no neutralizing activity with live virus or pseudovirions. Data should be shared as quickly as possible once it becomes available on future calls.
- Sera and B cells from SARS-CoV-2 patients are critically needed reagents. There should be continued effort to obtain B cells and sera from convalescing patients.
- There are some efforts to look at cross reactivity with other coronaviruses and these should be expanded.
- Continue to identify other participants for future calls who are generating these types of materials.

Attachment 1 – Summary table, filled in by the participants (note: some updates were sent after the call and contain additional information)



**World Health
Organization**

WHO R&D Blueprint novel Coronavirus

**Prospects for evaluating cross-reactivity of
nCoV with SARS-CoV**

**February 18, 2020
Geneva, Switzerland**



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Participants

Members of the R&D Blueprint Cross-Reactivity expert group

Name	Position	Institutional Affiliation
Ralph Baric	William R. Kenan, Jr. Distinguished Professor Professor	Department of Epidemiology Department of Microbiology and Immunology University of North Carolina
Carolyn Clark	Scientist	CEPI
Marciela De Grace	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
William Dowling	Non-Clinical Vaccine Development Leader	CEPI
Peter Daszak	President	EcoHealth Alliance
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Matthew Frieman	Associate Professor	Institute of Human Virology, University of Maryland
Susan Gerber	Chief, Respiratory Viruses Branch	Division of Viral Diseases, National Center for Immunization and Respiratory Diseases Centers for Disease Control and Prevention



Name	Position	Institutional Affiliation
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Mike Holbrook	High Containment Supervisor, Integrated Research Facility	National Institute of Allergy and Infectious Diseases
Rachel Ireland	Principal Scientist	CBR Division, Dstl porton Down
Marion Koopmans	Head of the Erasmus MC department of Viroscience	Erasmus MC, Centre for Infectious Disease Control (RIVM) - Viroscience (EMC)
Janet Lathey	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases
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Sylvie Van Der Werf		CNR des virus des infections respiratoires (dont la grippe) Unité de Génétique Moléculaire des Virus à ARN Institut Pasteur
Tianlei Ying		Fudan University

Experts invited but unable to attend

Name	Position	Institutional Affiliation
Karin Bok	Senior Advisor Vaccine Development,	Vaccine Research Center, National Institute of Allergy and Infectious Diseases
Christian Bréchet	President	Global Virus Network University of South Florida



	<p>Professor Dept of Internal Medicine and Senior Associate Dean for Research in Global Affairs; Associate Vice-President for International Partnerships and Innovation</p> <p>Senior adviser</p> <p>Emeritus Professor</p> <p>Former President</p>	<p>Romark Laboratory LC, Tampa, Florida, USA</p> <p>Paris-Descartes University, Paris</p> <p>Institut Pasteur</p>
Darin Carroll	Poxvirus and Rabies Branch	<p>National Center for Emerging and Zoonotic Infectious Diseases , Centers for Disease Control and Prevention ,</p> <p>Centers for Disease Control and Prevention</p>
Miles Carroll	<p>Deputy Director</p> <p>Head of Research & Development Institute</p>	National Infections Service Public Health England
Inger Damon	Director, Division of High Consequence Pathogens and Pathology	Centers for Disease Control and Prevention
Emmie de Wit	Chief, Molecular Pathogenesis Unit	Rocky Mountain Laboratory, National Institute of Allergy and Infectious Diseases
William Florence	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases



Volker Gerdts	Director & CEO	Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac) University of Saskatchewan
Raul Gomez Roman	Preclinical Vaccine Scientist	CEPI
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Jo Prior	Medical countermeasures lead	CBR Division, Dstl porton Down
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Connie Schmaljohn	Chief Scientist and Director, Integrated Research Facility	National Institute of Allergy and Infectious Diseases
Barbara Schnierle	Head of AIDS, New and Emerging Pathogens Section)	Paul Ehrlich Institut



Zhengli Shi	Senior Scientist & Professor	Wuhan Institute of Virology, Chinese Academy of Sciences
Manki Song	Acting Deputy Director General of Science	International Vaccine Institute
Seshadri Vasan	Senior Principal Research Consultant Team Leader - Dangerous Pathogens	<i>CSIRO Health & Biosecurity</i>
LinFa Wang,	Professor & Director	Programme in Emerging Infectious Disease Duke-NUS Medical School
Larry Wolfram	Program Officer	Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases

Objectives of the call

- To obtain an update of the status of development/availability of critical materials and reagents needed to formally evaluate cross-reactivity between nCoV and SARS in the laboratory
- To present any new data that has been generated which evaluates cross-reactivity and to outline planned experimental approaches that will inform on vaccine and monoclonal antibody selection and thus advance development timelines

Updates on Status of Viruses and Reagents

Virus isolates



CDC have completed the submission of their first viral isolate into BEI and that they are still the process of culturing isolates from other US cases, which will also be deposited into BEI Resources.

PHE reported that they have grown the viral stock that they received from Australia. They are also in the process of obtaining samples from UK cases.

The Institut Pasteur reported that they have isolates from 3 additional patients, which will be distributed through the European Virus Archive (EVAg). They are completing sequencing and titration.

VIDO-Intervac confirmed that they have grown virus from a Canadian case, which they are willing to share with other labs under an MTA.

NIAID-DMID reported that the CDC isolate is available through BEI and they are still working on the MTA to get isolates from Hong Kong deposited into BEI.

As mentioned last week, there is a German isolate available through EVAg.

There was a conversation about growth conditions. PHE is using Vero-E6 and Vero SLAM cells. The virus grows better in Vero-SLAM cells but reading plaques is difficult with these cells, so VeroE6 are used for plaquing. The CDC is using Vero cells, as previously reported. Erasmus University has used VeroE6 and Caco-2 cells. They are sequencing after each passage and seeing some mutations at passage 3. The Institut Pasteur has grown their virus in VeroE6 cells and have sequenced virus for 2 passages, with no mutations observed. NIBSC asked if anyone has inactivated virus and was told that this has not been done yet. There was a questions about Trypsin the culture medium and if that made a difference PHE has not used trypsin; Institut Pasteur and VIDO-Intervacc have used trypsin; the CDC person was not sure.

Recombinant viruses

There were no updates on recombinant viruses.

Recombinant Spike protein

The NIAID VRC previously reported that they have produced nCoV stabilized Spike protein and determined that it has the appropriate confirmation by electron microscopy. They have sent this protein to the CDC. They have also made the plasmids available to other groups and are looking for help to scale up protein production.

Erasmus has produced S1 protein which they are sharing in several collaborations

Univ of Pittsburgh were on the call and have produced the RBD, an RBD-FC fusion protein and an ACE2-Fc fusion protein.

VIDO-Intervac are now producing S1 protein.



Fudan University has published on having a purified RBD.

Pseudoviruses

The NIAID VRC have made lentivirus and VSV pseudoviruses, and are currently optimizing conditions for their use in neutralization assays.

NIBSC indicated have received the genes that they ordered and are waiting on beginning to produce HIV and VSV pseudotypes with SARS-CoV or nCoV Spike proteins.

Fudan University have produced an HIV based pseudovirus.

Convalescent serum and B cells from nCoV patients and mAbs

CDC reported that they have serum from their first patient and that they have used this in an ELISA. Supplies are very limited.

NIH has one vial of PBMCs and are waiting for more to be collected and then distributed. As previously mentioned, there will be a US government interagency sample sharing working group which will determine prioritization for these samples.

PHE is waiting for anti-SARS mAbs to arrive in the next 2-3 weeks.

NIBSC are looking to get convalescent serum to make an antibody standard but have not received any yet.

Results and Planned experimental approaches regarding cross-reactivity

NIAID VRC have anti-SARS mAbs; several are binding in ELISA assays and some of these now appear to neutralize pseudovirions.

Fudan Univ. reported that 6 anti-SARS mAbs were tested in binding to RBD, and only 1 of 7 bound, mAb CR3022 (this is now published). This mAb is from Crucell but it was reported by PHE that it is also available from Creative Biolabs, for research purposes only.

Univ of Pittsburgh used a phage display technique and have generated nCoV specific mAbs which bind to their RBD protein and they are planning to test in neutralization assays with a collaborator. They have ones that compete with the ACE2-Fc construct for binding to RBD and so should neutralize.

NIAID-DMID will be issuing a task order for development of ELISA and neutralization assays.

NIBSC is planning to develop standards and ELISA and neutralization assays. They are looking to get convalescent serum to make an antibody standard but have not received any yet.



Erasmus has a platform for coronaviruses, an array of S proteins This platform is portable and has already been employed in other locations. They have now added nCoV S to this platform. They are also

Animal models

Erasmus is planning rhesus macaque and ferret studies

PHE and CSIRO are planning ferret studies

Proposed next steps

- Several nCoV virus isolates are now available from multiple sources. Additional isolates will soon be available. There should be continued discussion of optimal cell lines, growth conditions and assays to measure viral infectivity. There should also be analysis of sequences of multiple passages to look for conditions that lead to tissue culture adaptation.
- Multiple groups have reported binding of anti-SARS antisera and mAbs with nCoV and neutralization assays are now being performed with pseudovirions. Neutralization assays with nCoV viruses will be available soon. Data should be shared as quickly as possible once it becomes available on future calls.
- A panel of high-titer sera from human SARS survivors would be a very useful tool, if a source can be identified. Also, nCoV hyperimmune serum as well as sera and B cells from nCoV patients will also be very useful. There was discussion of planned distribution of B cells in the US but efforts should be made to source B cells and sera for wider distribution.
- Continue to identify other participants for future calls who are generating these types of materials.

Attachment 1 – Summary table, filled in by the participants (note: some updates were sent after the call and contain additional information)

From: Klena, John D. (CDC/DDID/NCEZID/DHCPP)
Sent: Fri, 8 May 2020 13:23:20 +0000
To: Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP); Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP); Chiang, Cheng-Feng (CDC/DDID/NCEZID/DHCPP)
Subject: RE: SARS-CoV-2 ELISA SOP

thx

From: Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP) <ztq9@cdc.gov>
Sent: Friday, May 8, 2020 9:09 AM
To: Klena, John D. (CDC/DDID/NCEZID/DHCPP) <irc4@cdc.gov>; Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP) <dsc4@cdc.gov>; Chiang, Cheng-Feng (CDC/DDID/NCEZID/DHCPP) <div4@cdc.gov>
Subject: RE: SARS-CoV-2 ELISA SOP

(b)(5)

From: Klena, John D. (CDC/DDID/NCEZID/DHCPP) <irc4@cdc.gov>
Sent: Friday, May 8, 2020 8:43 AM
To: Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP) <dsc4@cdc.gov>; Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP) <ztq9@cdc.gov>; Chiang, Cheng-Feng (CDC/DDID/NCEZID/DHCPP) <div4@cdc.gov>
Subject: RE: SARS-CoV-2 ELISA SOP

(b)(5)

From: Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP) <dsc4@cdc.gov>
Sent: Friday, May 8, 2020 7:41 AM
To: Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP) <ztq9@cdc.gov>; Klena, John D. (CDC/DDID/NCEZID/DHCPP) <irc4@cdc.gov>; Chiang, Cheng-Feng (CDC/DDID/NCEZID/DHCPP) <div4@cdc.gov>
Subject: RE: SARS-CoV-2 ELISA SOP

(b)(5)

D

From: Montgomery, Joel M. (CDC/DDID/NCEZID/DHCPP) <ztq9@cdc.gov>
Sent: Thursday, May 7, 2020 9:08 PM
To: Klena, John D. (CDC/DDID/NCEZID/DHCPP) <irc4@cdc.gov>; Chiang, Cheng-Feng

(CDC/DDID/NCEZID/DHCPP) <div4@cdc.gov>; Cannon, Deborah L. (CDC/DDID/NCEZID/DHCPP) <dsc4@cdc.gov>

Subject: SARS-CoV-2 ELISA SOP

Hey Guys.

(b)(3)

Thanks.

J.

Joel M. Montgomery, PhD
CAPT US Public Health Service
Chief, Viral Special Pathogens Branch
Division of High Consequence Pathogens and Pathology (DHCPP)
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
U.S. Centers for Disease Control and Prevention (CDC)
1600 Clifton Road, NE, MS H16-5, Atlanta, GA 30329
404.718.1444 office | (b)(6) cell | ztq9@cdc.gov

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Sent: Tue, 23 Jun 2020 20:18:38 +0000
To: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP);Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD)
Subject: Re: SARS-CoV-2 positive sera for cross-reactivity studies

Sathesh,

This is great. Looks like you have plenty also with strongly activity.

When you are ready, we can arrange for transfer of specimens.

Best,

Jeff

From: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>

Sent: Tuesday, June 23, 2020 4:16:14 PM

To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>

Subject: RE: SARS-CoV-2 positive sera for cross-reactivity studies

(b)(5)

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(b)(5)

Best,
Sathesh

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, June 23, 2020 12:22 PM
To: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: Re: SARS-CoV-2 positive sera for cross-reactivity studies

(b)(5)

Many Thanks,

Jeff

From: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>
Sent: Tuesday, June 23, 2020 12:18:02 PM
To: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: SARS-CoV-2 positive sera for cross-reactivity studies

Thanks Michele [REDACTED]

Sathesh

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Sent: Tuesday, June 23, 2020 12:16 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Cc: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>
Subject: FW: SARS-CoV-2 positive sera for cross-reactivity studies

FYI, [REDACTED]

[REDACTED]

Michele

From: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>
Sent: Monday, June 22, 2020 11:37 AM
To: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: SARS-CoV-2 positive sera for cross-reactivity studies

Hi Michele,

[REDACTED]

Thanks,
Sathesh

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD)
Sent: Tue, 23 Jun 2020 20:18:17 +0000
To: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP); Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE)
Subject: RE: SARS-CoV-2 positive sera for cross-reactivity studies

Thanks for sending the data.

Best,
Michele

From: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>
Sent: Tuesday, June 23, 2020 4:16 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: RE: SARS-CoV-2 positive sera for cross-reactivity studies

Sure Jeff. Currently, I have data for

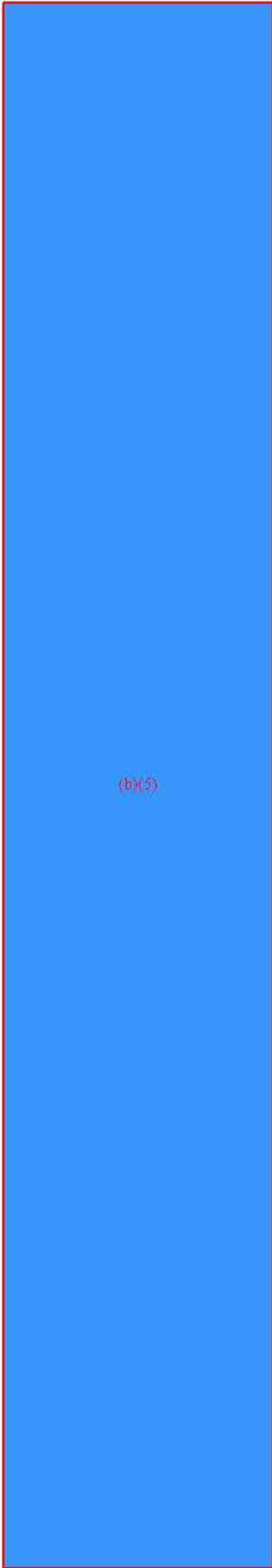
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Best,
Sathesh

From: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Sent: Tuesday, June 23, 2020 12:22 PM
To: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: Re: SARS-CoV-2 positive sera for cross-reactivity studies

(b)(5)

Many Thanks,

Jeff

From: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>
Sent: Tuesday, June 23, 2020 12:18:02 PM
To: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>; Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>
Subject: RE: SARS-CoV-2 positive sera for cross-reactivity studies

Thanks Michele,

(b)(5)

Sathesh

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Sent: Tuesday, June 23, 2020 12:16 PM
To: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jjj6@cdc.gov>
Cc: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>
Subject: FW: SARS-CoV-2 positive sera for cross-reactivity studies

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(b)(6)

Michele

From: Panayampalli, Subbian Satheshkumar (CDC/DDID/NCEZID/DHCPP) <xdv3@cdc.gov>
Sent: Monday, June 22, 2020 11:37 AM
To: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Subject: SARS-CoV-2 positive sera for cross-reactivity studies

Hi Michele,

(b)(5)

Thanks,
Sathesh

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD)
Sent: Sun, 19 Apr 2020 22:31:42 +0000
To: Bean, Christopher (CDC/DDNID/NCBDDD/DBD); Hooper, Craig (CDC/DDNID/NCBDDD/DBD)
Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE); Limbago, Brandi (CDC/DDID/NCIRD/OD); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Carroll, Darin (CDC/DDID/NCEZID/OD)
Subject: RE: SARS-CoV-2 serologic testing

Thanks Chris

S. Michele Owen
CDC IMS LAB TF
2019 nCoV Response
mowen@cdc.gov
W 404 639-1046
C (b)(6)

From: Bean, Christopher (CDC/DDNID/NCBDDD/DBD) <est6@cdc.gov>
Sent: Sunday, April 19, 2020 4:20 PM
To: Hooper, Craig (CDC/DDNID/NCBDDD/DBD) <woh1@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbl7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>
Subject: RE: SARS-CoV-2 serologic testing

Thanks Craig,

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(b)(5)

-Chris

From: Hooper, Craig (CDC/DDNID/NCBDDD/DBD) <woh1@cdc.gov>
Sent: Saturday, April 18, 2020 12:05 PM
To: Bean, Christopher (CDC/DDNID/NCBDDD/DBD) <est6@cdc.gov>; Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>
Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbl7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>
Subject: Re: SARS-CoV-2 serologic testing

Thsnks Michele....While I will defer to ChrisI can say the platforms that we have are under CLIA.....I do understand you are in the projection stage but are you thinking of 100s to 1000s per week and also is there any consideration , if already not being done, of running cytokine panels., coag markers on a subset of patients...

Thanks

From: Owen, Sherry M. (Michele) (CDC/DDID/NCHHSTP/OD) <smo2@cdc.gov>

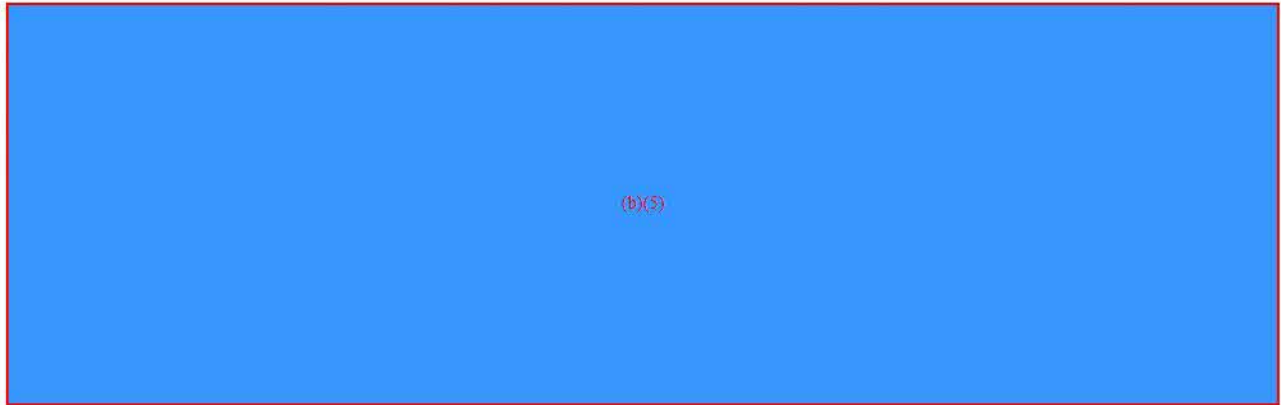
Sent: Saturday, April 18, 2020 11:49:33 AM

To: Bean, Christopher (CDC/DDNID/NCBDDD/DBD) <est6@cdc.gov>; Hooper, Craig (CDC/DDNID/NCBDDD/DBD) <woh1@cdc.gov>

Cc: Johnson, Jeff (CDC/DDID/NCHHSTP/DHPSE) <jlj6@cdc.gov>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <bbl7@cdc.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Carroll, Darin (CDC/DDID/NCEZID/OD) <zuz4@cdc.gov>

Subject: SARS-CoV-2 serologic testing

Hi Craig and Chris,



Best,
Michele

S. Michele Owen, PhD
CDC IMS LAB TF- Co-Lead
2019 nCoV Response
mowen@cdc.gov
W 404 639-1046

C