U-25-4016/IMO-1B (FOIA)   December 23, 2025

Law Office of Mr. Nathaniel M. Lindzen
57 School Street
Wayland, MA 01778

Dear Mr. Lindzen:

This is the seventh interim response to the Freedom of Information Act (FOIA) request dated May 5, 2024 that you submitted to the Defense Intelligence Agency (DIA) requesting records pertaining to 1) correspondence to or from three named individuals containing key terms; 2) genomic analysis authored/performed by the named individuals; 3) a DIA-originated working paper, to include versions and corrections on or before the date of publication. The time frame requested was September 1, 2019 – January 1, 2021.

As you are aware, this case is currently the subject of litigation in the United States District Court for the District of Columbia, case number 24-cv-00982.

A search of DIA's systems of records located documents identified as responsive to the requests described above. This response addresses 51 records (343 pages). Upon review, DIA determined that some portions of 15 documents (140 pages) must be withheld in part from disclosure pursuant to the FOIA. The withheld portions are exempt from release pursuant to Exemptions 1, 3, 6 and 7(E) of the FOIA, 5 U.S.C. § 552 (b)(1), (b)(3), (b)(6), and (b)(7)(E). Exemption 1 applies to information properly classified under the criteria of Executive Order 13526. Exemption 3 applies to information specifically exempted by a statute establishing particular criteria for withholding. The applicable statutes are 10 U.S.C. § 424 and 50 U.S.C. § 3024(i). Statute 10 U.S.C. § 424 protects the identity of DIA employees, the organizational structure of the agency, and any function of DIA. Statute 50 U.S.C. § 3024(i) protects intelligence sources and methods. Exemption 6 applies to information which if released would constitute an unwarranted invasion of the personal privacy of other individuals. Exemption 7(E) protects law enforcement information, the release of which would disclose techniques and procedures for law enforcement investigations or prosecutions, or would disclose guidelines for law enforcement investigations or prosecutions if such disclosure could reasonably be expected to risk circumvention of the law.

Further, DIA has determined that 33 documents (160 pages) must be withheld in full from disclosure pursuant to the FOIA. These withheld documents are exempt from release pursuant to Exemptions 1, 3, and 6 of the FOIA, 5 U.S.C. § 552 (b)(1), (b)(3), and (b)(6).

Finally, DIA has referred the last 3 documents (43 pages) to another government agency for review and direct response to you. This referral was necessary because the documents did not originate with DIA.

DIA has not withheld any reasonably segregable non-exempt portions of the records.

You can expect the next interim response in January 2026.

Sincerely,

C. C. Davison
Chief, Records Management and Open Government

From:
To:
CC:

(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

Subject: RE:
Date: 2020/06/24 13:54:23
Priority: Normal
Type: Note

(b)(3):10 USC 424; (b)(3):50 USC 3024(i);
(b)(6)

==

Thank you will not be able to get the updates (they grabbed the slides during their weekly JWICS access yesterday), but I did forward to

From:
Sent: Wednesday, June 24, 2020 1:51 PM
To:
Cc:

(b)(3):10 USC 424; (b)(6)

Subject: RE (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c)

I added one more slide....

From
Sent: Wednesday, June 24, 2020 4:30 PM
To:
Cc:

(b)(3):10 USC 424; (b)(6)

Subject: RE:

(b)(3):10 USC 424; (b)(6)

===

Remarkable. Many thanks, sir.

From:
Sent: Wednesday, June 24, 2020 11:53 AM
To:
Cc:
Subject: RE

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i);
Sec. 1.4(c); (b)(6)

Here are some updated slides

(b)(3):10 USC 424; (b)(6)

From:
Sent: Wednesday, June 24, 2020 2:49 PM
(b)(1); (b)(3):50
USC 3024(i);
Sec. 1.4(c)
To: (b)(3):10 USC 424; (b)(6)
Cc:
Subject: RE:

(b)(3):10 USC 424; (b)(3):50 USC 3024(i);
(b)(6)

===

(b)(3):10 USC 424; (b)(6)

Apologies sir, _____ just came over to recap the conversation you had about aa identity in the RBD for SARS2 and pangolin; I didn't realize this is what you may have been referring to below (e.g. see also Xiao et al., attached

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c)

Any thoughts on all this are most welcome!

From:
Sent: Wednesday, June 24, 2020 8:59 AM
To:
Cc:
Subject: RE:

~~Classification: TOP SECRET/~~

~~Classified By:~~

~~Derived From: DIA SCG dated 20070108~~
~~Declassify On: 20451231~~
===

Great idea. Could you please remind me which   has been sending along

(Actually   and I asked them to do this a few weeks ago.)

But at the moment it is, of course, "temporarily down for maintenance".

From:
Sent: Tuesday, June 23, 2020 3:51 PM
To:
Subject:

~~Classification: TOP SECRET/~~

~~Classified By:~~

~~Derived From: DIA SCG dated 20070108~~
~~Declassify On: 20451231~~
===

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

(b)(3):10 USC 424; (b)(6)

From:
Sent: Tuesday, June 2, 2020 7:46 PM
To:
Subject: RE: (b)(3):50 USC 3024(i); (b)(6)

~~Classification: TOP SECRET~~

(b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classified By:~~
~~Derived From:~~
~~Declassify On: 20451231~~
===

(b)(3):10 USC 424; (b)(6)

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

Apologies for the disorganized data dump, sir. I have to run to get home for something.

Attached are a few emails with analysis and correspondence regarding

Looking forward to catching up tomorrow if you have time!

(b)(3):10 USC 424; (b)(6)

From:
Sent: Tuesday, June 02, 2020 1:29 PM

To: [(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i): Sec. 1.4(c); (b)(6)]

I am back up on JWICS. They had to re-image the entire hard drive. My JWICS phone number is

From: [(b)(3):10 USC 424; (b)(6)]
Sent: Monday, June 1, 2020 2:21 PM
To: [(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i): Sec. 1.4(c); (b)(6)]
Subject: RE:

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ [(b)(3):10 USC 424; (b)(6)]
~~Derived From: DIA~~ ~~SCG~~
~~Declassify On: 20450421~~

===

Great, thank you! [(b)(3):10 USC 424; (b)(6)]

From: [(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i): Sec. 1.4(c); (b)(6)]
Sent: Monday, June 01, 2020 1:59 PM
To:
Subject: RE:

[(b)(3):10 USC 424; (b)(6)]

~~CLASSIFICATION: SECRET//NOFORN~~

Ok. Hopefully they will have the office set up by tomorrow morning.

~~CLASSIFICATION: SECRET//NOFORN~~

From:

Sent: Monday, June 1, 2020 12:50 PM

To:

Subject: RE

(b)(3):10 USC 424: (b)(1): (b)(3):50 USC 3024(i): Sec. 1.4(c): (b)(6)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~
~~Derived From: DIA~~ ~~SCG~~
~~Declassify On: 20450421~~

(b)(3):10 USC 424: (b)(6)

===

Thank you, sir! Great. Because of our shift schedule, [ ] and I probably will be chased from the building sometime between 1400 and 1500 (we're on the earlier shift). But if we miss you today and if you'll have easy access to a phone again tomorrow or later in the week, we are mostly available all week until mid-afternoon.

(b)(3):10 USC 424: (b)(1): (b)(3):50 USC 3024(i): Sec. 1.4(c): (b)(6)

From

Sent: Monday, June 01, 2020 12:38 PM

To:

Subject:

~~CLASSIFICATION: SECRET//NOFORN~~

I will have a read over the document that you sent. I should be in an office this afternoon and would be able to give you a phone number.

(b)(3):10 USC 424: (b)(6)

~~CLASSIFICATION: SECRET//NOFORN~~

===

~~Classification: SECRET//NOFORN~~

===

~~Classification: SECRET//NOFORN~~

===

~~Classification: TOP SECRET/~~

(b)(3):50 USC 3024(i); (b)(6)

===
~~Classification: TOP SECRET~~   (b)(3):50 USC 3024(i)

===
~~Classification: TOP SECRET~~

===
~~Classification: TOP SECRET~~

===
~~Classification: SECRET//NOFORN~~

===
~~Classification: SECRET//NOFORN~~

Sender: (b)(3):10 USC 424; (b)(6)

Recipient:

Sent Date: 2020/06/24 13:54:24
Delivered Date: 2020/06/24 13:54:23

From:

To:

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i):
Sec. 1.4(c); (b)(6)

Subject: RE:

Date: 2020/06/24 13:36:41

Priority: Normal

Type: Note

Classification: SECRET//NOFORN

Classified By:
Derived From: SCG dated 20110916
Declassify On: 20360916

(b)(3):10 USC 424; (b)(3):50 USC 3024(i): (b)(6)

==

updated slides in your folder.

From:

Sent: Wednesday, June 24, 2020 12:30 PM

To:

Cc:

Subject: RE:

Classification: SECRET//NOFORN

Classified By:
Derived From: DIA   SCG
Declassify On: 20450421

==

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i):
Sec. 1.4(c); (b)(6)

Remarkable. Many thanks, sir.

(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i):
Sec. 1.4(c); (b)(6)

From:

Sent: Wednesday, June 24, 2020 11:53 AM

To:

Cc:

Subject: RE:

Here are some updated slides.

From:
Sent: Wednesday, June 24, 2020 2:49 PM
To:
Cc:
Subject: RE

==

(b)(3):10 USC 424; (b)(6)

Apologies sir, just came over to recap the conversation you had about aa identity in the RBD for SARS2 and pangolin; I didn't realize this is what you may have been referring to below (e.g. see also Xiao et al., attached

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

Any thoughts on all this are most welcome!

From:
Sent: Wednesday, June 24, 2020 8:59 AM
To:
Cc:
Subject: RE

==

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6

Great idea. Could you please remind me which   has been
sending along

(Actually   I asked them to do this a few weeks ago.)

But at the moment it is, of course, "temporarily down for maintenance".
(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

From
Sent: Tuesday, June 23, 2020 3:51 PM
To:
Subject: RE

==

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e); (b)(6)

From:
Sent: Tuesday, June 2, 2020 7:46 PM
To:
Subject: RE:

(b)(1): (b)(3):10 USC 424:
(b)(3):50 USC 3024(i): Sec.
1.4(c): (b)(6)

~~Classification: TOP SECRET/~~

~~Classified By:~~

~~Derived From:~~

~~Declassify On: 20451231~~

===

(b)(3):10 USC 424: (b)(1): (b)(3):50 USC 3024(i): Sec.
1.4(c): Sec. 1.4(e): (b)(6)

Apologies for the disorganized data dump, sir. I have to run to get home for something.

Attached are a few emails with analysis and correspondence regarding

Looking forward to catching up tomorrow if you have time!

From:
Sent: Tuesday, June 02, 2020 1:29 PM
To:
Subject: RE:

(b)(3):10 USC 424: (b)(1): (b)(3):50 USC 3024(i):
Sec. 1.4(c): (b)(6)

I am back up on JWICS. They had to re-image the entire hard drive. My JWICS phone number is 558-1253.

Sent: Monday, June 1, 2020 2:21 PM
To:
Subject: RE:

(b)(3):10 USC 424:
(b)(6)

==

Great, thank you!

(b)(3):10 USC 424: (b)(1): (b)(3):50 USC
3024(i): Sec. 1.4(c): (b)(6)

From
Sent: Monday, June 01, 2020 1:59 PM
To
Subject: RE:

Ok. Hopefully they will have the office set up by tomorrow morning.

From
Sent: Monday, June 1, 2020 12:50 PM
To:
Subject: RE:

(b)(1): (b)(3):10
USC 424:
(b)(3):50 USC
3024(i): Sec.
1.4(c): (b)(6)

(b)(3):10 USC
424: (b)(6)

==

Thank you, sir! Great. Because of our shift schedule, ____ and I probably will be chased from the building sometime between 1400 and 1500 (we're on the earlier shift). But if we miss you today and if you'll have easy access to a phone again tomorrow or later in the week, we are mostly available all week until mid-afternoon.

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

From:
Sent: Monday, June 01, 2020 12:38 PM
To:
Subject:

CLASSIFICATION: SECRET//NOFORN

(b)(3):10 USC 424; (b)(6)

I will have a read over the document that you sent. I should be in an office this afternoon and would be able to give you a phone number.

CLASSIFICATION: SECRET//NOFORN

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Classification: SECRET//NOFORN

==
Classification: SECRET//NOFORN

==
Classification: TOP SECRET/

(b)(3):50 USC 3024(i)

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Classification: TOP SECRET/

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Classification: TOP SECRET/

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Classification: TOP SECRET/

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Classification: SECRET//NOFORN

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Classification: SECRET//NOFORN

Sender: (b)(3):10 USC 424; (b)(6)

The final page is withheld in full citing (b)(3)10 USC 424 and (b)(6), and is not provided.

From: (b)(3):10 USC 424; (b)(6)

To:

CC:

Subject: RE: (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c)

Date: 2020/06/26 09:16:52

Priority: Normal

Type: Note

Classification: TOP SECRET/

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

Classified By:

Derived From: DIA SCG dated 20070100

Declassify On: 20451231

==

Got it! Thank you. Sure, here you go.

From

Sent: Thursday, June 25, 2020 4:00 PM

To

Cc

Subject:

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

Classification: TOP SECRET

(b)(3):10 USC 424; (b)(6)

Classified By:

Derived From: DIA SCG dated 20070100

Declassify On: 20451231

==

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

Here is the file.

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

Unfortunately, I would just do the alignment myself on JWICS, but they still do not have my certs approved. Speed of the government....

In addition....

(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e); (b)(6)

From:
Sent: Wednesday, June 24, 2020 12:59 PM
To:
Cc:
Subject: RE:

(b)(3):10 USC 424;
(b)(1); (b)(3):50 USC
3024(i); Sec. 1.4(c);
(b)(6)

~~Classification: TOP SECRET/~~

~~Classified By:~~
~~Derived From: DIA SCG dated 20070100~~
~~Declassify On: 20451231~~
===

(b)(3):10 USC 424; (b)(6)

Great idea. Could you please remind me which [   ] has been sending along [   ]

(Actually [   ] I asked them to do this a few weeks ago.)

(b)(3):50 USC 3024(i)

(b)(1); (b)(3):50 USC 3024(i);
Sec. 1.4(c); (b)(6)

But at the moment it is, of course, "temporarily down for maintenance".

(b)(3):10 USC 424;
(b)(6)

From:
Sent: Tuesday, June 23, 2020 3:51 PM
To:
Subject: RE:

(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

~~Classification: TOP SECRET/~~

~~Classified By:~~
~~Derived From: DIA SCG dated 20070108~~
~~Declassify On: 20451231~~
===

(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e); (b)(6)

From:
Sent: Tuesday, June 2, 2020 7:46 PM
To:
Subject: RE:

~~Classification: TOP SECRET/~~

~~Classified By:~~
~~Derived From:~~
~~Declassify On: 20451231~~

==

Apologies for the disorganized data dump, sir. I have to run to get home for something.

Attached are a few emails with analysis and correspondence regarding
Looking forward to catching up tomorrow if you have
time!

V/r,

From:
Sent: Tuesday, June 02, 2020 1:29 PM
To:
Subject: RE:

I am back up on JWICS. They had to re-image the entire hard drive. My JWICS phone number is (b)(3):10 USC 424; (b)(6)

(b)(3):10 USC 424; (b)(6)

From:
Sent: Monday, June 1, 2020 2:21 PM
To:
Subject: RE

~~Classification: SECRET//NOFORN~~

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

~~Classified By:~~
~~Derived From: DIA   SCG~~
~~Declassify On: 20450421~~
==

Great, thank you!

From:
Sent: Monday, June 01, 2020 1:59 PM
To:
Subject: RE:

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

~~CLASSIFICATION: SECRET//NOFORN~~

(b)(3):10 USC 424; (b)(6)

Ok. Hopefully they will have the office set up by tomorrow morning.

~~CLASSIFICATION: SECRET//NOFORN~~

From:
Sent: Monday, June 1, 2020 12:50 PM
To:
Subject: RE:

(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

====================================   ====================

Thank you, sir! Great. Because of our shift schedule, [ ] and I probably will be chased from the building sometime between 1400 and 1500 (we're on the earlier shift). But if we miss you today and if you'll have easy access to a phone again tomorrow or later in the week, we are mostly available all week until mid-afternoon.

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

From:
Sent: Monday, June 01, 2020 12:38 PM
To:
Subject:

I will have a read over the document that you sent. I should be in an office this afternoon and would be able to give you a phone number.

(b)(3):10 USC 424; (b)(6)

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(b)(3):50 USC 3024(i)

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=============================   =========

=============================   =========

===========================(b)(3):50 USC 3024(i)==========

~~Classification: TOP SECRET/~~

===

~~Classification: TOP SECRET/~~

Sender:

Recipient:

Sent Date: 2020/06/26 09:16:48
Delivered Date: 2020/06/26 09:16:52

From:

To:

Subject: RE: SARS-CoV-2 Origins

Date: 2020/10/09 08:40:23

Priority: Normal

Type: Note

~~Classification: TOP SECRET~~

~~Classified By:~~

~~Derived From: Multiple Sources~~

~~Declassify On: MR of 20251007~~

===

Unfortunately, I don't have the others.

From:

Sent: Thursday, October 08, 2020 1:52 PM

To:

Subject: RE: SARS-CoV-2 Origins

~~Classification: TOP SECRET/~~

~~Classified By:~~

~~Derived From: Multiple Sources~~

~~Declassify On: MR of 20251007~~

===

Hi

Attached is what I have. I'll continue tomorrow.

From:
Sent: Thursday, October 08, 2020 12:44 PM
To:

(b)(3):10 USC 424:
(b)(6)

Cc:
Subject: SARS-CoV-2 Origins

~~Classification: TOP SECRET~~
(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)
~~Classified By:~~
~~Derived From: Multiple Sources~~
~~Declassify On: MR or 20251007~~
===

Team,
(b)(3):10 USC 424: (b)(6)

We are moving forward on the re-evaluation of the SARS-CoV-2 origins analysis. We believe working through an ACH with a diverse group will achieve the best results and ask for your help and participation. The goal was representation from

If I've missed someone viral to the analysis, please let me know and we can discuss adding them.

(b)(5)

put together an initial ACH framework with the evidence they have collected. From here I propose we follow the steps below:

We realize this is a big undertaking and appreciate your support! Please reach out if you have additional questions for need assistance.

Cheers,

From:

To: (b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

Subject: Re: SARS-CoV-2 Origins

Date: 2020/10/08 13:36:57

Priority: Normal

Type: Note

makes sense.

From

Sent: Thursday, October 8, 2020 1:05:04 PM

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

To:

Cc:

Subject: RE: SARS-CoV-2 Origins

Classification: TOP SECRET/

Classified By (b)(3):10 USC 424; (b)(6)

Derived From: Multiple Sources

Declassify On: 20451231

==

expanding this out to a wider audience is farther down the line. I'm including only because they have the and worked with us on previous production.

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

(b)(3):10 USC 424; (b)(6)

From:

Sent: Thursday, October 08, 2020 1:00 PM

To:

Subject: Re: SARS-CoV-2 Origins

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

I would suggest to add who has worked intimately with the COV-2 genome. Also, since they have not performed my migration yet, many of my papers are on the low side. I forwarded many of those to earlier and have asked her to help me with the Do we have a few days to finish the

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

From:

Sent: Thursday, October 8, 2020 12:44:11 PM

To

Cc:

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

Subject: SARS-CoV-2 Origins

~~Classification: TOP SECRET/~~

~~Classified By:~~

~~Derived From: Multiple Sources~~

~~Declassify On: MR or 20251007~~

===

Team,

(b)(3):10 USC 424; (b)(6)

We are moving forward on the re-evaluation of the SARS-CoV-2 origins analysis. We believe working through an ACH with a diverse group will achieve the best results and ask for your help and participation. The goal was representation from

If I've missed someone viral to the analysis, please let me know and we can discuss adding them.

(b)(5)

(b)(3):10 USC 424; (b)(6) put together an initial ACH framework with the evidence they have collected. From here I propose we follow the steps below:

(b)(3):10 USC 424; (b)(5); (b)(6)

(b)(3):10 USC 424; (b)(5); (b)(6)

We realize this is a big undertaking and appreciate your support! Please reach out if you have additional questions for need assistance.

Cheers,

(b)(3):10 USC 424; (b)(6)

=========================== (b)(3):50 USC 3024(i)
~~Classification: TOP SECRET~~

===========================
~~Classification: TOP SECRET~~

===========================
~~Classification: TOP SECRET~~

Sender: (b)(3):10 USC 424; (b)(6)

Recipient:

Sent Date: 2020/10/08 13:36:56

Delivered Date: 2020/10/08 13:36:57

From: (b)(3):10 USC 424; (b)(6)

To:

CC:

Subject: RE: SARS-CoV-2 Origins (b)(3):50 USC 3024(i)

Date: 2020/10/09 06:31:23

Priority: Normal

Type: Note

Classification: ~~TOP SECRET~~/ (b)(3):50 USC 3024(i)

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)
~~Derived From: Multiple Sources~~
~~Declassify On: MR or 20251007~~
===

(b)(3):10 USC 424; (b)(6)

(b)(3):10 USC 424; (b)(6)

(b)(3):10 USC 424

I will leave [(b)(3):10 USC 424)] participation up to [ ] That way he can balance expertise with [ ]

(b)(3):10 USC 424

production commitments and provide a consolidated response.

Cheers,

(b)(3):10 USC 424; (b)(6)

Sent: Thursday, October 08, 2020 1:47 PM

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

Subject: RE: SARS-CoV-2 Origins

~~Classification: TOP SECRET~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)
~~Derived From: Multiple Sources~~
~~Declassify On: MR or 20251007~~

==

Hi

(b)(3):10 USC 424; (b)(6)

and I have also been talking to   about the origins question.

(b)(5)

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e); (b)(5)

Also, in case people want to refer to the common definitions decided [   ] I've attached those for people's convenience.

Best,

From: [   ]
Sent: Thursday, October 08, 2020 12:44 PM

Subject: SARS-CoV-2 Origins

~~Classification: TOP SECRET/~~

~~Classified By:~~
~~Derived From: Multiple Sources~~
~~Declassify On: MR or 20251007~~
===

Team,

We are moving forward on the re-evaluation of the SARS-CoV-2 origins analysis. We believe working through an ACH with a diverse group will achieve the best results and ask for your help and participation. The goal was representation from [   ] If I've missed someone viral to the analysis, please let me know and we can discuss adding them.

(b)(3):10 USC 424; (b)(6) put together an initial ACH framework with the evidence they have collected. From here I propose we follow the steps below:

(b)(3):10 USC 424; (b)(5); (b)(6)

We realize this is a big undertaking and appreciate your support! Please reach out if you have additional questions for need assistance.

Cheers,

(b)(3):10 USC 424; (b)(6)

The final page is withheld in full citing (b)(3) 10 USC 424 + 50 USC 3024(i) and (b)(6), and is not provided.

DEFENSE INTELLIGENCE AGENCY

(b)(3):10 USC 424; (b)(6)

29 JUNE 2020

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

Overall Briefing: TOP SECRET/

The next 2 pages are withheld in full citing (b)(1) and (b)(3) 50 USC 3024(i), and are not provided.

(b)(3):50 USC 3024(i)

Classified by: Derived from: Declassify on:

ICOD: PCN:

(U) DIA AUTHORITATIVE ASSESSMENT (27 MAR 2020)

China: Origins of COVID-19 Outbreak Remain Unknown

DEFENSE INTELLIGENCE | 27 MARCH 2020

The next page is withheld in full citing (b)(1) and (b)(3) 50 USC 3024(i), and are not provided.

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

(U) **"Genetic engineering" here is**: using a set of biotechnologies to manipulate or "edit" an organism or virus's genome; it does not include directed evolution by other means such as the use of repeated passage through animals or cell culture.
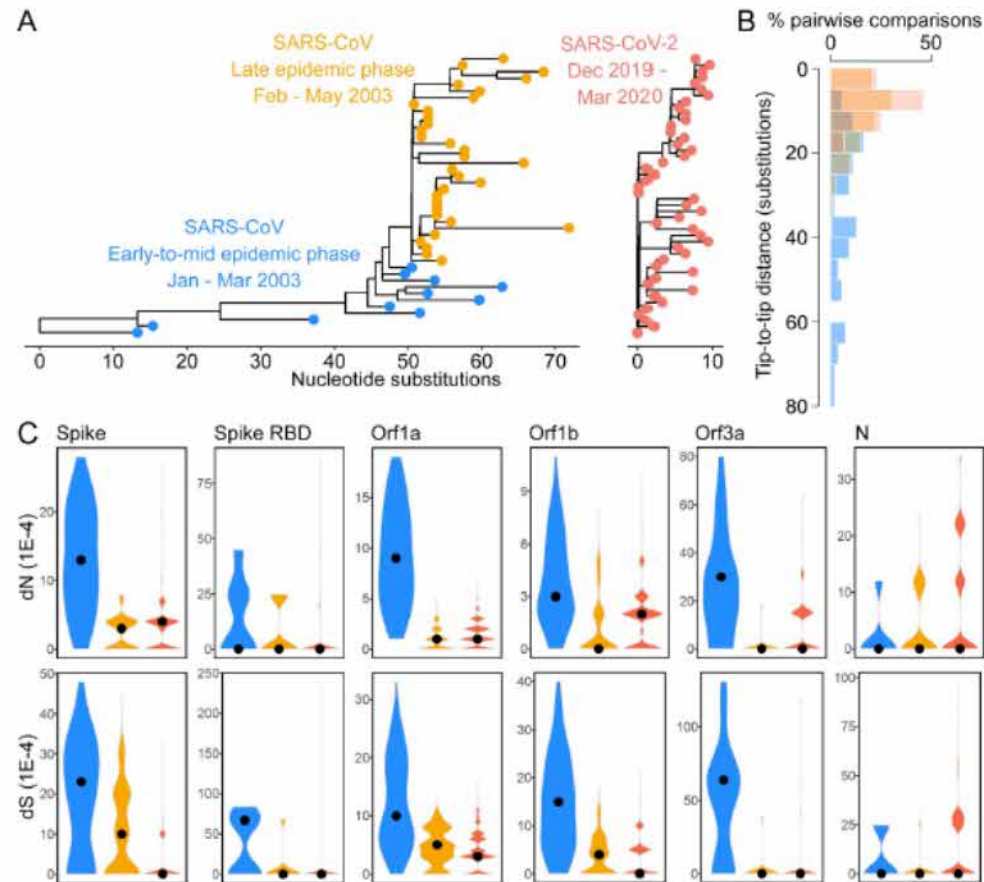
(U) NOTABLE VIRUS FEATURES

(U) Adaptation to humans early in the outbreak: genomic evolution study

(U) "In a side-by-side comparison of evolutionary dynamics between the 2019/2020 SARS-CoV-2 and the 2003 SARS-CoV, we were surprised to find that SARS-CoV-2 resembles SARS-CoV in the late phase of the 2003 epidemic after SARS-CoV had developed several advantageous adaptations for human transmission. Our observations suggest that ==by the time SARS-CoV-2 was first detected in late 2019, it was already pre-adapted to human transmission== to an extent similar to late epidemic SARS-CoV."
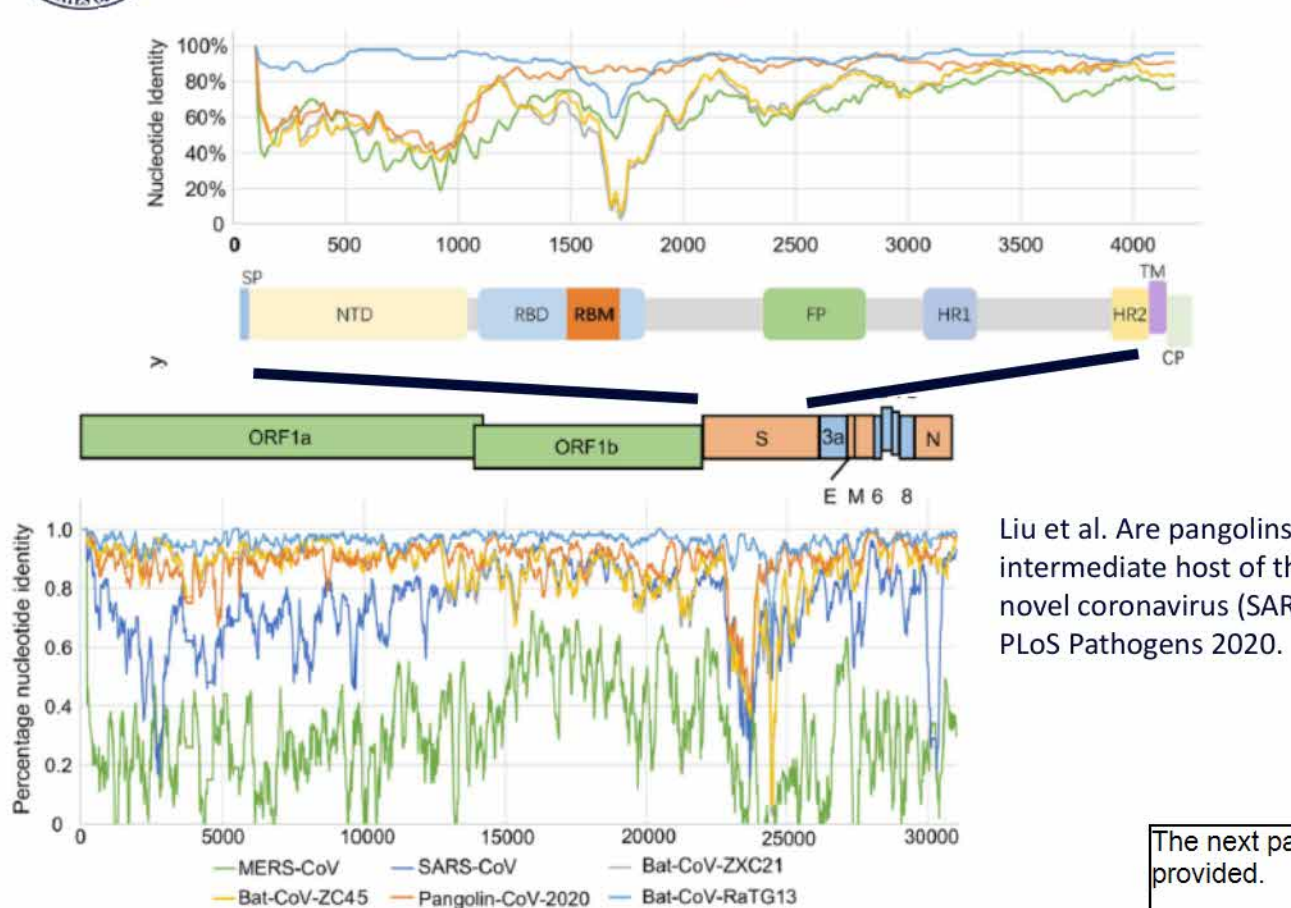
Zhan et al. SARS-CoV-2 is well adapted for humans. What does this mean for emergence? bioRxiv 2020.

Human adaptation ⟶ Homology break points ⟶ Furin cleavage site ⟶ Research capabilities ⟶ Research underway ⟶ Scenario

(U) NOTABLE VIRUS FEATURES

(U) Similar to bat and pangolin coronaviruses in different regions

Liu et al. Are pangolins the intermediate host of the 2019 novel coronavirus (SARS-CoV-2)? PLoS Pathogens 2020.

(U) "In the region of nucleotides 1-914, Pangolin-CoV is more similar to Bat SARSr-CoV ZXC21 and Bat SARSr-CoV ZC45, while in the remaining part of the gene, Pangolin-CoV is more similar to SARS-CoV-2 and Bat-CoV-RaTG13 . . . In particular, the receptor-binding domain of the S protein of Pangolin-CoV has only one amino acid difference from that of SARS-CoV-2. Overall, these data indicate that ==SARS-CoV-2 might have originated as the recombination of a Pangolin-CoV-like virus with a Bat-CoV-RaTG13-like virus.==

Xiao et al. Isolation of SARS-CoV-2-related coronavirus from Malayan pangolins. Nature 2020.

The next page is withheld in full citing (b)(3) 50 USC 3024(i), and is not provided.

Human adaptation → **Homology break points** → Furin cleavage site → Research capabilities → Research underway → Scenario

(U) COULD A LAB HAVE MADE THE VIRUS?

(U) "The Institute [Wuhan Institute of Virology] does not have the capability to design and synthesize a new coronavirus . . ."(U) China Ministry of Foreign Affairs, press release 5 May 2020
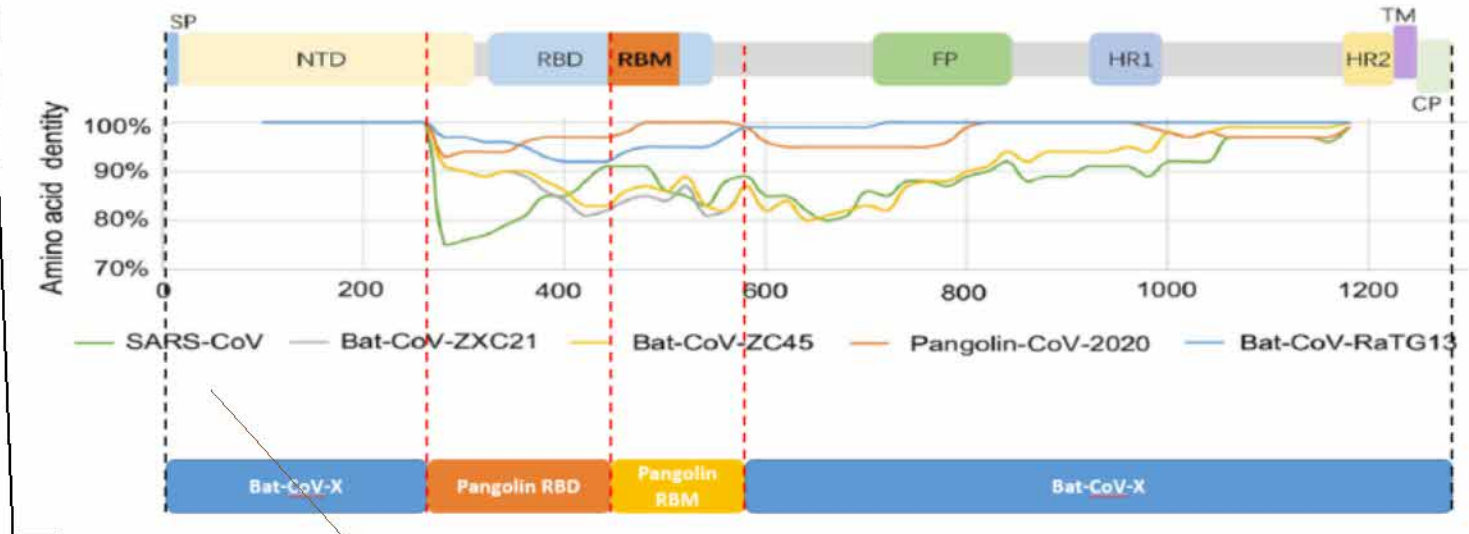
The next page is withheld in full citing (b)(1) and (b)(3) 50 USC 3024(i), and is not provided.

Human adaptation → Homology break points → Furin cleavage site → **Research capabilities** → Research underway → Scenario

(U) PREVIOUS WIV RESEARCH IN RELATION TO SARS-COV-2

(U) Example: Identification of specific mutations that enable bat CoV to infect human cells (2008)

Ren et al. Difference in receptor usage between Severe Acute Respiratory Syndrome (SARS) Coronavirus and SARS-Like Coronavirus of bat origin. J Virol 2008.
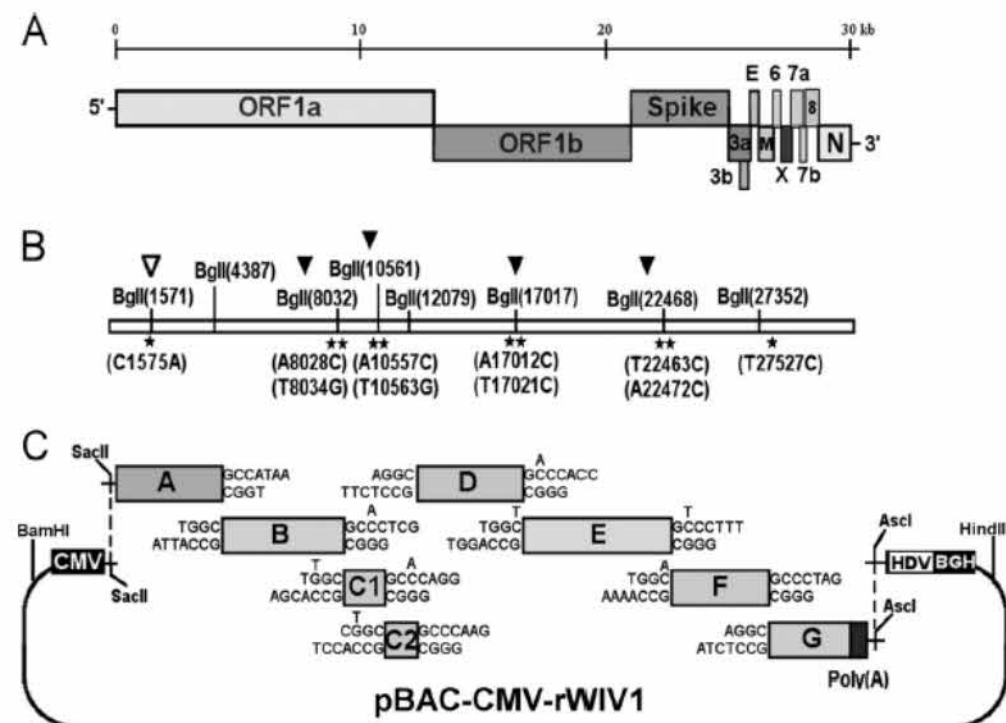
(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e); (b)(6)

Human adaptation ⟶ Homology break points ⟶ Furin cleavage site ⟶ **Research capabilities** ⟶ Research underway ⟶ Scenario

(U) PREVIOUS WIV RESEARCH IN RELATION TO SARS-COV-2

(U) Example: Method for synthesizing bat CoV WIV1 (reverse genetics system; 2016)

A

B

C

pBAC-CMV-rWIV1

(U) "Strategy for construction of an infectious WIV1 BAC clone."

(U "In this study, we have developed a fast and cost-effective method for reverse genetics of coronaviruses by combining two approaches developed by others. Our method allows the genomes of coronaviruses to be split into multiple fragments and inserted into a BAC plasmid with a single step . . . As the genomes can be divided into multiple short fragments, mutations can be introduced into individualfragments easily."
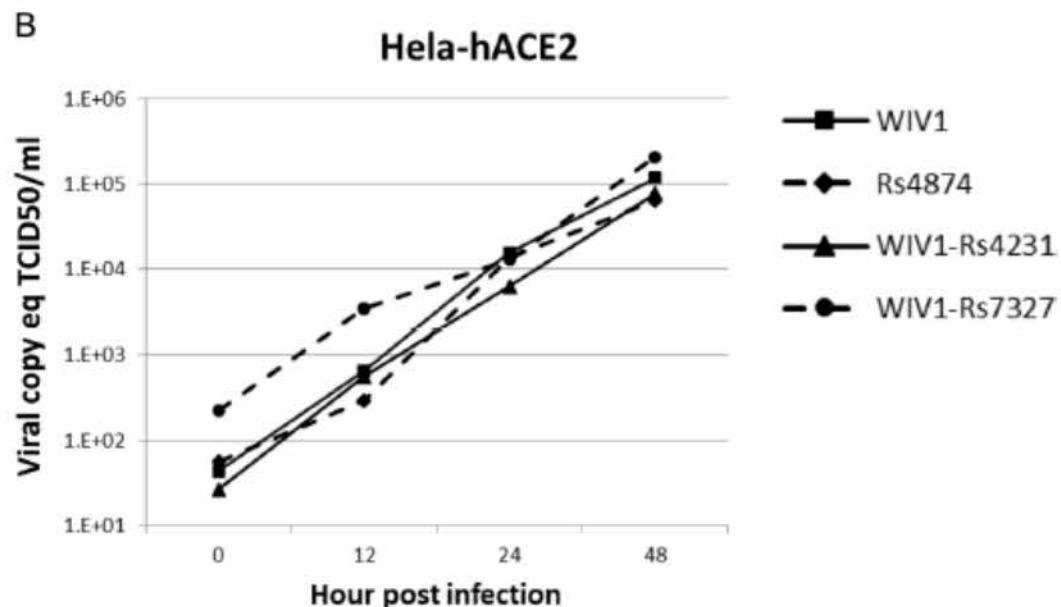
Zeng et al. Bat Severe Acute Respiratory Syndrome-Like Coronavirus WIV1 encodes an extra accessory protein, ORFX, involved in modulation of the host immune response. J Virol 2016.

Human adaptation ⟶ Homology break points ⟶ Furin cleavage site ⟶ **Research capabilities** ⟶ Research underway ⟶ Scenario

(U) PREVIOUS WIV RESEARCH IN RELATION TO SARS-COV-2

(U) Example: Construction of chimeras with spike from new bat CoVs on WIV1 backbone, infection studies (2017)

B

Hela-hACE2

Viral copy eq TCID50/ml vs Hour post infection

Legend:
- WIV1
- Rs4874
- WIV1-Rs4231
- WIV1-Rs7327

(U) Synthetic chimera infection of cells with human receptor.

(U "In this cave, we have now obtained full-length genome sequences of additional 11 novel SARSr-CoVs from bats . . . Using the reverse genetics technique we previously developed for WIV1, we constructed a group of infectious bacterial artificial chromosome (BAC) clones with the backbone of WIV1 and variants of S genes from 8 different bat SARSr-CoVs."

Hu et al. Discovery of a rich gene pool of bat SARS-related coronaviruses provides new insight into the origin of SARS coronavirus. PLoS Pathogens 2017.
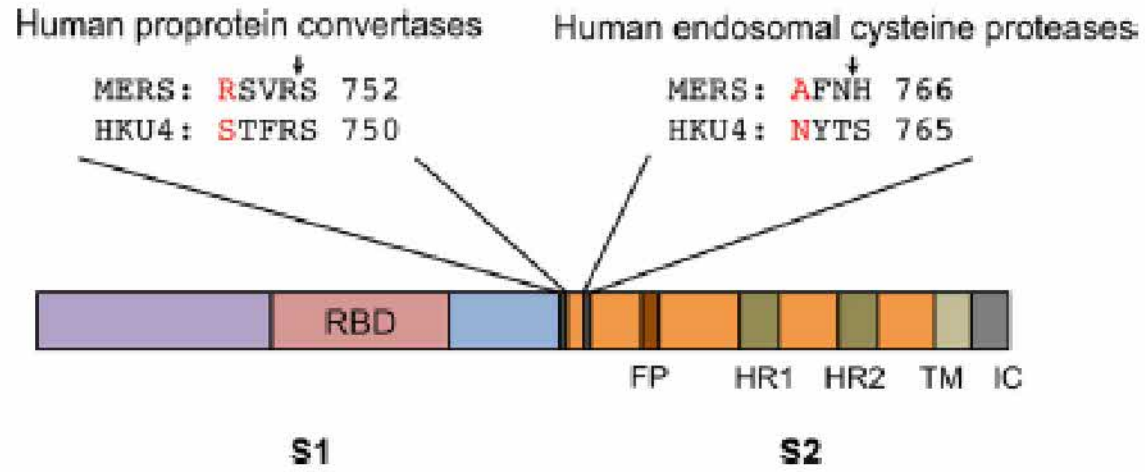
Human adaptation ⟶ Homology break points ⟶ Furin cleavage site ⟶ **Research capabilities** ⟶ Research underway ⟶ Scenario

(U) PREVIOUS WIV RESEARCH IN RELATION TO SARS-COV-2

(U) Example: Insertion of furin cleavage site enabling bat CoV (MERS-CoV progenitor) to infect human cells (2015)

Human proprotein convertases

MERS: RSVRS 752
HKU4: STFRS 750

Human endosomal cysteine proteases

MERS: AFNH 766
HKU4: NYTS 765

RBD

FP HR1 HR2 TM IC

S1 S2

(U) MERS-CoV and bat CoV HKU4 spike proteins.

(U) " . . . the two mutations adaptive tohuman cellular proteases transformed MERS-CoV spike from completely lacking to fully possessing the capacity to mediate viral entry into human cells, and thus they likely played the most criticalrole in the bat-to-human transmission of MERS-CoV, either directly or through intermediate hosts."

Yang et al. Two mutations were critical for bat-to-human transmission of Middle East Respiratory Syndrome coronavirus. J Virol 2015.

The next 4 pages are withheld in full citing (b)(1) and (b)(3) 50 USC 3024(i), and are not provided.

Human adaptation ⟶ Homology break points ⟶ Furin cleavage site ⟶ **Research capabilities** ⟶ Research underway ⟶ Scenario

DEFENSE INTELLIGENCE AGENCY
COMMITTED TO EXCELLENCE IN DEFENSE OF THE NATION

• (U) NOTABLE VIRUS FEATURES

• (U) Adaptation to humans early in the outbreak: computational receptor binding study

Table 4. Binding energies of SARS-CoV-2 spike protein to ACE2 of selected species and potential species susceptibilities from other studies

Species	Binding energy kcal/mol	MMPBSA energy kcal/mol	COVID infectivity n/a = not assessed
Homo sapiens (human)	-52.8	-57.6	Permissive, high infectivity, severe disease in 5-10%,
Manis javanica (pangolin)	-52.0	-56.5	Permissive
Canis luparis (dog)	-50.8	-49.5	Permissive, low infectivity, no overt disease
Macaca fascicularis (monkey)	-50.4	-50.8	Permissive, medium infectivity, lung disease
Mesocricetus auratus (hamster)	-49.7	-50.0	Permissive, high infectivity, lung disease
Mustela putorius furo (ferret)	-48.6	-49.2	Permissive, medium infectivity, mild disease
Felis catus (cat)	-47.6	-48.9	Permissive, high infectivity, lung disease
Panthera tigris (tiger)	-47.3	-42.5	Permissive, overt respiratory symptoms
Rhinolophus sinicus (bat)	-46.9	-49.6	n/a
Paguma larvata (civet)	-45.1	-46.1	n/a
Equus ferus caballus (horse)	-44.1	-49.2	Permissive, low infectivity, no overt disease
Bos taurus (cow)	-43.6	-42.5	n/a
Ophiophagus hannah (snake)	-39.5	-52.5	n/a
Mus musculus (mouse)	-38.8	-39.4	n/a

(b)(3):50 USC 3024(i)

Piplani et al. In silico comparison of spike protein-ACE2 binding affinities across species; significance for the possible origin of the SARS-CoV-2 virus. arXiv 2020.

Human adaptation ⟶ Homology break points ⟶ Furin cleavage site ⟶ Research capabilities ⟶ Research underway ⟶ Scenario

(U) CHINESE GENOME REPORT

(U) We have questions

- (U) No mention of furin cleavage site in original report.(U) Reference to BatCoV RaTG13 in original report does not mention a virus reported by WIV in 2016 BatCoV/4991, with identical RdRp sequence (i.e., RaTG13=4991?).(U) WIV identified BatCoV/4991 in cave expedition following fatal pneumonia outbreak among miners in 2012 (Ge et al., 2016); no scientific reports of cause of the outbreak.

SARS-CoV-2 Furin cleavage site

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

Live samples of RaTG13 or 4991 not known to exist.(U) Large-scale contamination evident in pangolin sequences (Zhang et al., 2020).

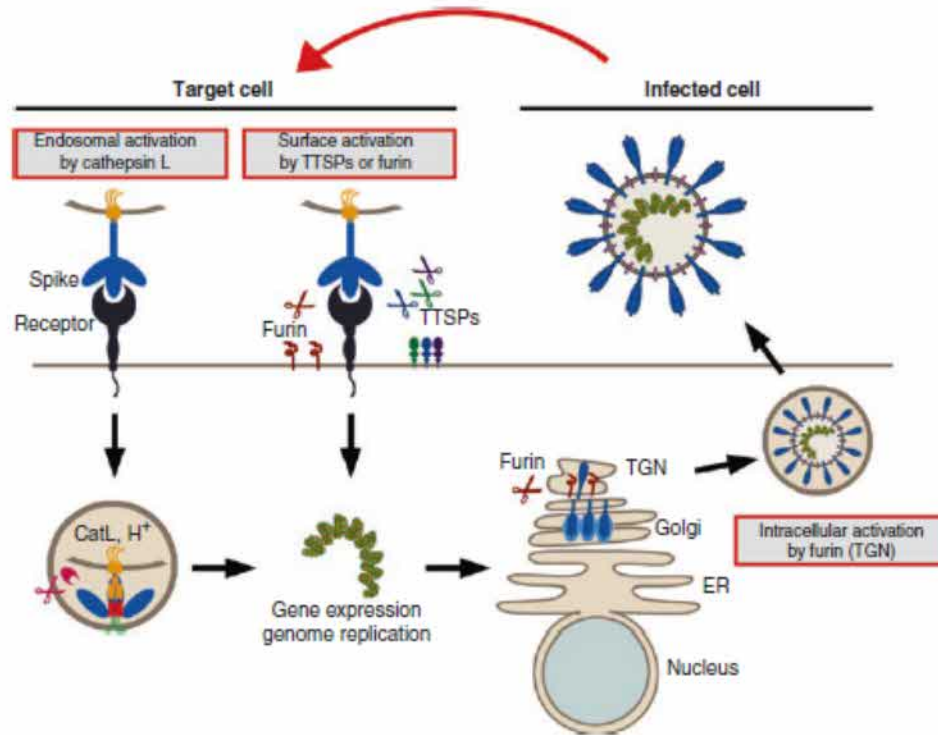Zhou et al. A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature 2020.

(U) NOTABLE VIRUS FEATURES

Ploybasic furin cleavage site

(b)(3):50 USC 3024(i)

Hoffmann et al. Priming time: how cellular proteases arm coronavirus spike proteins. Activation of Viruses by Host Proteases 2018.

Piplani et al. In silico comparison of spike protein-ACE2 binding affinities across species; significance for the possible origin of the SARS-CoV-2 virus. arXiv 2020.

(U) COULD A LAB HAVE CONSTRUCTED THE VIRUS?

(U) "The Institute [Wuhan Institute of Virology] does not have the capability to design and synthesize a new coronavirus . . ."(U) China Ministry of Foreign Affairs, press release 5 May 2020

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

The final 5 pages are withheld in full citing (b)(1), (b)(3) 10 USC 424 + 50 USC 3024(i), and (b)(6) and are not provided.

Human adaptation → Chimeric genome → Furin cleavage site → **Research capabilities** → Research underway

From:

To:

Subject: Fw: SARS-CoV-2 Origins
Date: 2020/10/08 13:01:37
Priority: Normal
Type: Note

would you be able to help with the

From:
Sent: Thursday, October 8, 2020 1:00 PM
To:
Subject: Re: SARS-CoV-2 Origins

I would suggest to add who has worked intimately with the COV-2 genome. Also, since they have not performed my migration yet, many of my papers are on the low side. I forwarded many of those to earlier and have asked her to help me with the Do we have a few days to finish the

From:
Sent: Thursday, October 8, 2020 12:44:11 PM
To:

Cc:
Subject: SARS-CoV-2 Origins

~~Classification: TOP SECRET/~~
~~Classified By:~~
~~Derived From: Multiple Sources~~
~~Declassify On: MR or 20251007~~
==

Team,

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If I've missed someone viral to the analysis, please let me know and we can discuss adding them.

(b)(5)

(b)(3):10 USC 424; (b)(6) put together an initial ACH framework with the evidence they have collected. From here I propose we follow the steps below:

(b)(3):10 USC 424; (b)(5); (b)(6)

We realize this is a big undertaking and appreciate your support! Please reach out if you have additional questions for need assistance.

(b)(3):10 USC 424; (b)(6)

Cheers,

The final page is withheld in full citing (b)(3) 10 USC 424 and 50 USC 3024(i) and (b)(6) and is not provided.

From: (b)(3):10 USC 424; (b)(6)

To:

Subject: DIA assessment of SARS-CoV-2 origin
Date: 2020/06/08 12:01:00
Priority: Normal
Type: Note

Classification: TOP SECRET/

Classified By: (b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)
Derived From:
Declassify On: 20451231
==

Gentlemen,

For reference, please find attached DIA's standing assessment of SARS-CoV-2 origin, from March.

V/r,

(b)(3):10 USC 424; (b)(6)

========================== (b)(3):50 USC 3024(i)
Classification: TOP SECRET/

Sender: (b)(3):10 USC 424; (b)(6)

Recipient:

Sent Date: 2020/06/08 12:02:04
Delivered Date: 2020/06/08 12:01:00

From:

To: (b)(3):10 USC 424; (b)(6)

Subject: [ ] analysis in progress

Date: 2020/06/11 10:08:00

Priority: Normal

Type: Note

~~Classification: TOP SECRET~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

~~Derived From:~~

~~Declassify On: 20451231~~

===

(b)(3):10 USC 424; (b)(6)

I thought I'd share what I have before getting too far along, so at least you can get a sense of the length and structure. We get 1 page, with an opening paragraph (authoritative assessment, (b)(3):50 USC 3024(i) (b)(3):50 USC 3024(i) context) followed by 3 evidence bullets, which I think we agreed are 1) capabilities and objectives, 2) features for SARS-CoV-2, (b)(3):50 USC 3024(i)

I took a shot at the opening paragraph and the 2nd bullet, on SARS-CoV-2 features of note. I'll work in your capabilities/objectives material into the 1st bullet (which I think may be our strongest), and in the meantime will start on the 3rd bullet.

Thank you,

(b)(3):10 USC 424; (b)(6)

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

The next two pages are withheld in full citing (b)(1) and (b)(3) 10 USC 424 + 50 USC 3024(i) and (b)(6), and are not provided.

China: Origins of COVID-19 Outbreak Remain Unknown

DEFENSE INTELLIGENCE | 27 MARCH 2020

(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

---

[i] (U) For this product, we define genetic engineering as using a set of biotechnologies to manipulate or "edit" an organism or virus's genome; it does not include directed evolution by other means such as the use of repeated passage through animals or cell culture.

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

(b)(3):10 USC 424; (b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

> (U) WIV and Wuhan CDC scientists collect SARS-like coronaviruses from bats in the wild, according to a news article and a Chinese prepublished academic article.[20] [21] While collecting coronavirus samples, a Wuhan CDC researcher was accidentally exposed to bat blood and urine and subsequently self-quarantined for 14 days, according to the same Chinese prepublished academic article.[22] The Wuhan CDC's discarded infected animal tissue samples could be the source of the initial COVID-19 patient infections, according to the same source.[23]

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(d)

The next 3 pages are withheld in full pursuant to Exemptions 1, 3 (10 USC 424 + 50 USC 3024(i)), and (7)(E) and are not provided.

Any reproduction, dissemination, or communication (including, but not limited to, oral briefings) of this information must be accompanied by a statement of these restrictions.

(U) Prepared by

(U) Coordinated with:

(b)(3):10 USC 424;
(b)(3):50 USC 3024(i)

The final 5 pages are withheld in full pursuant to Exemptions 1, 3 (10 USC 424 + 50 USC 3024(i)), and (7)(E) and are not provided.

(b)(3):10 USC 424; (b)(3):50 USC 3024(i)

From: (b)(1); (b)(3):10 USC 424; Sec. 1.4(c); (b)(6)

To:

Subject:

Date: 2020/06/17 10:24:07

Priority: Normal

Type: Note.SMIME.MultipartSigned

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

==

FYI, others starting to ask the questions we've been asking.

(b)(1); (b)(3):10 USC 424; (b)(3):50 USC 3024(i); Sec. 1.4(c); (b)(6)

From:
Sent: Wednesday, June 17, 2020 9:10 AM
To:

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

Cc:

Subject:

~~Classification: TOP SECRET~~/

~~Classified By:~~
~~Derived From: Department of State SCG~~
~~Declassify On: 20451231~~

==

Hi All,

Looping in a few more people and following-up that I'm also interested in   and
curious about more context

From
Sent: Tuesday, June 9, 2020 5:08 PM
To

Cc

Subject:

~~Classification: TOP SECRET~~

~~Classified By:~~
~~Derived From: Department of State SCG~~
~~Declassify On: 20451231~~

===

Hi all,
Curious if anyone has published [(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c)] I've cut down the distro to a few folks I think were working on this issue, since when I replied to [ ] last time I got many bounce backs. I also added

From:
Sent: Friday, May 29, 2020 4:21 PM
To:

The next 4 pages are withheld in full
citing (b)(3) 10 USC 424 and 50 USC
3024(i) and (b)(6), and are not provided.

Cc:

Subject:

~~Classification: TOP SECRET/~~

~~Classified By:~~

~~Derived From: Department of State SCG~~

~~Declassify On: 20451231~~

===

Thank you for this! Just to clarify, when you say

From:
Sent: Friday, May 29, 2020 4:02 PM
To:

The next 5 pages are withheld in full citing (b)(1), (b)(3) 10 USC 424 +
50 USC 3024(i) and (b)(6), and are not provided.

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

Subject:

(b)(1): (b)(3):50 USC
3024(i): Sec. 1.4(c): (b)(6)

==

please see the below comment regarding a topic from our VTC today.

From:

(b)(3):50 USC 3024(i): (b)(6)

Sent: Friday, May 22, 2020 12:22 PM

To:

Subject:

~~Classification: TOP SECRET//~~

As discussed in the VTC,

I received an undeliverable when trying to reply all to the VTC group, thanks again for passing along to them.

Thanks,

~~Classified By~~

~~Derived From~~

~~Dated: 20180110~~

~~Declassify On: 20150501~~

The final page is withheld in full citing (b)(3) 10 USC 424 + 50 USC 3024(i) and (b)(6), and is not provided.

From:	(b)(3):10 USC 424; (b)(6)
To:	
CC:	
Subject:	
Date:	2020/08/11 12:09:43
Priority:	Normal
Type:	Note

~~Classification: TOP SECRET/~~

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

~~Classified By:~~
~~Derived From:~~
~~Declassify On: 20451231~~

==

Perfect, [ ] thank you! That combined with [ ] outline should be all we need.

(b)(3):10 USC 424; (b)(6)

From: [ ]
Sent: Tuesday, August 11, 2020 11:29 AM
To: [ ]

(b)(3):10 USC 424; (b)(6)

Cc: [ ]

Subject: [ ]

~~Classification: TOP SECRET/~~

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

~~Classified By:~~

The following page is withheld citing (b)(3) 10 USC 424 + 50 USC 3024(i) and (b)(6), and is not provided.

==

is gathering that information.

From:
Sent: Tuesday, August 11, 2020 8:58 AM
To:

Cc:

Subject:

==

I still would like a rundown of the actual dates, please?

(b)(3):10 USC 424; (b)(6)

From:
Sent: Tuesday, August 11, 2020 6:55 AM
To:

Cc:

Subject:

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

This is hugely helpful; thank you! may have additional questions when he returns on Friday, but I believe this will suffice for now.

Thanks again!

Sent: Monday, August 10, 2020 2:21 PM

To

Cc

Subject

Subject:

Classification: UNCLASSIFIED//FOUO

==

Yes, that is exactly the information we need to piece together!

(b)(3):10 USC 424; (b)(3):50 USC 3024(i);
(b)(6)

From:
Sent: Monday, August 10, 2020 1:28 PM
To:

Cc:

Subject:

Classification: UNCLASSIFIED//FOUO

==

ALCON,

For additional information, what we're also trying to discern is the following:

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

From:
Sent: Monday, August 10, 2020 12:51 PM
To

Cc:

Subject:

Classification: UNCLASSIFIED//FOUO

==

Please consolidate a timeline and synopsis for   on   support to

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

The final two pages are withheld citing (b)(3) 10 USC 424 + 50 USC 3024(i) and (b)(6), and are not provided.

(b)(3):10 USC 424; (b)(6)

Subject (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

Date: 2020/04/30 15:35:00

Priority: Normal

Type: Note

==

FYI, (b)(3):10 USC 424; (b)(6) is here and we are working on the 1-pager.

V/r,

(b)(3):10 USC 424; (b)(6)

From: (b)(3):10 USC 424; (b)(6)

Sent: Thursday, April 30, 2020 2:52 PM

To: (b)(3):10 USC 424; (b)(6)

Cc:

Subject: FW: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

==

(b)(3):50 USC 3024(i)

(b)(3):50 USC 3024(i)

(b)(3):10 USC 424; (b)(6)

From: (b)(3):10 USC 424; (b)(6)
Sent: Thursday, April 30, 2020 2:45 PM
To (b)(3):10 USC 424; (b)(6)
Subject: RE: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)
~~Derived From: DI SCG, ODNI CG~~
~~Declassify On: FixedDate~~
==

(b)(3):10 USC 424; (b)(6)

Looks good; I offered a few suggestions.

(b)(3):10 USC 424;
(b)(6)

(b)(3):50 USC 3024(i)

From: (b)(3):10 USC 424; (b)(6)

Sent: Thursday, April 30, 2020 2:32 PM

To: (b)(3):10 USC 424; (b)(6)

Subject: RE: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)

~~Derived From: DI SCG, ODNI CG~~

~~Declassify On: FixedDate~~

==

(b)(3):10 USC 424;
(b)(6)

My edits below. Please ensure I did not mischaracterize with my changes. If you are good, let me know and I'll forward.

(b)(3):10 USC 424; (b)(6)

From: (b)(3):10 USC 424; (b)(6)

Sent: Thursday, April 30, 2020 2:19 PM

To: (b)(3):10 USC 424; (b)(6)

Cc:

GO

Subject: RE: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)

~~Derived From: DI SCG, ODNI CG~~

~~Declassify On: FixedDate~~

==

(b)(3):10 USC 424; (b)(6)

Please see below the response we just discussed. I will work on a more detailed, slightly more technical response now and aim to get to you within the hour. [(b)(3):10 USC 424; /] may have left for the day—I am not sure—but I will get started and loop him in if I see him.

(b)(3):10 USC 424; (b)(6)

(b)(3):10 USC 424; (b)(6)

(b)(3):50 USC 3024(i)

From: (b)(3):10 USC 424; (b)(6)
Sent: Thursday, April 30, 2020 7:38 AM

(b)(3):10 USC 424; (b)(6)

Subject: FW: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)
~~Derived From: DI SCG, ODNI CG~~
~~Declassify On: FixedDate~~
==

(b)(3):10 USC 424; (b)(6)

Please see question below from LTG Ashley and provide me a response.

Thank you,

(b)(3):10 USC 424; (b)(6)

(b)(3):10 USC 424

From: Ashley Robert P LTG DIA DR (b)(3):10 USC 424; (b)(6)
Sent: Wednesday, April 29, 2020 4:05 PM

(b)(3):10 USC 424; (b)(6)

White Suzanne L DIA DD/

; Sawyer Johnny O DIA CS

(b)(3):10 USC 424; (b)(6)

Subject: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)
~~Derived From: DI SCG, ODNI CG~~
~~Declassify On: FixedDate~~
===

(b)(3):10 USC 424; (b)(6)

Thanks.
Can you unpack the highlighted portion below. Not sure exactly what your telling me? Unexpected but

(b)(3):50 USC 3024(i); (b)(6)

From: (b)(3):10 USC 424; (b)(6)
Sent: Wednesday, April 29, 2020 3:55 PM
To: Ashley Robert P LTG DIA DR (b)(3):10 USC 424; (b)(6)

(b)(3):10 USC 424; (b)(6)

White Suzanne L DIA DD/

; Sawyer Johnny O DIA CS

(b)(3):10 USC 424; (b)(6)

Subject: RE: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

The following page is withheld in full citing (b)(3) 10 USC 424 + 3014(i) and (b)(6), and is not provided.

From: (b)(3):10 USC 424; (b)(6)
Sent: Tuesday, April 21, 2020 3:58 PM
To: Ashley Robert P LTG DIA DR (b)(3):10 USC 424; (b)(6)
(b)(3):10 USC 424; (b)(6)
Subject: RE: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)
~~Derived From: DI SCG, ODNI CG~~
~~Declassify On: FixedDate~~

===

Sir,

Copy all. Working it.

Thank you,

(b)(3):10 USC 424; (b)(6)

From: Ashley Robert P LTG DIA DR (b)(3):10 USC 424; (b)(6)
Sent: Tuesday, April 21, 2020 2:24 PM
(b)(3):10 USC 424; (b)(6)
Subject: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)
~~Derived From: DI SCG, ODNI CG~~
~~Declassify On: FixedDate~~

===

(b)(3):10 USC 424; (b)(6)

(b)(3):10 USC 424; (b)(3):50 USC 3024(i); (b)(6)

From:
Sent: Tuesday, April 21, 2020 2:13 PM
To: Ashley Robert P LTG DIA DR (b)(3):10 USC 424; (b)(6)
Subject: RE:(b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

(b)(3):10 USC 424; (b)(6)

~~Classified By:~~
~~Derived From: DI SCG, ODNI CG~~
~~Declassify On: FixedDate~~
==

(b)(3):50 USC 3024(i)

From: Ashley Robert P LTG DIA DR (b)(3):10 USC 424; (b)(6)
Sent: Tuesday, April 21, 2020 12:42 PM
To (b)(3):10 USC 424; (b)(6)
Subject: FW: (b)(3):10 USC 424; (b)(3):50 USC 3024(i)

~~Classification: SECRET//NOFORN~~

~~Classified By:~~ (b)(3):10 USC 424; (b)(6)
~~Derived From: DI SCG~~
~~Declassify On: 20360705~~
==

(b)(3):10 USC 424; (b)(6)

See the string below.
They have only had unclass conversations.
I asked them to link up for classified discussion.

From: Ashley Robert P LTG DIA DR
Sent: Tuesday, April 21, 2020 12:41 PM   (b)(3):10 USC 424; (b)(6)
To
Cc:

The final 5 pages are withheld in full citing (b)(1), (b)(3) 10 USC 424 + 3014(i) and (b)(6), and are not provided.

DEFENSE INTELLIGENCE AGENCY

(b)(3):10 USC 424; (b)(6)

29 JUNE 2020

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

Overall Briefing: TOP SECRET

(b)(3):50 USC 3024(i)

The next 2 pages are withheld in full citing (b)(1) and (b)(3) 50 USC 3024(i), and are not provided.

Classified by: Derived from: Declassify on:

COMMITTED TO EXCELLENCE IN DEFENSE OF THE NATION

ICOD: PCN:

(U) DIA AUTHORITATIVE ASSESSMENT (27 MAR 2020)

China: Origins of COVID-19 Outbreak Remain Unknown

DEFENSE INTELLIGENCE | 27 MARCH 2020

The next page is withheld in full citing (b)(1) and (b)(3) 50 USC 3024(i), and is not provided.

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

(U) **"Genetic engineering" here is**: using a set of biotechnologies to manipulate or "edit" an organism or virus's genome; it does not include directed evolution by other means such as the use of repeated passage through animals or cell culture.
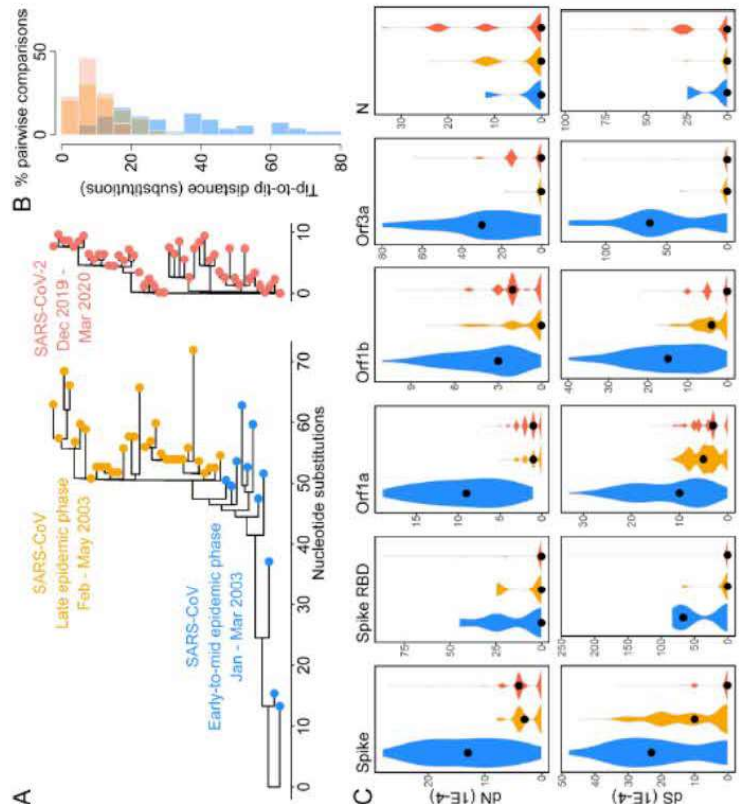
(U) NOTABLE VIRUS FEATURES

(U) Adaptation to humans early in the outbreak: genomic evolution study

(U) "In a side-by-side comparison of evolutionary dynamics between the 2019/2020 SARS-CoV-2 and the 2003 SARS-CoV, we were surprised to find that SARS-CoV-2 resembles SARS-CoV in the late phase of the 2003 epidemic after SARS-CoV had developed several advantageous adaptations for human transmission. Our observations suggest that by the time SARS-CoV-2 was first detected in late 2019, it was already pre-adapted to human transmission to an extent similar to late epidemic SARS-CoV."

Zhan et al. SARS-CoV-2 is well adapted for humans. What does this mean for emergence? bioRxiv 2020.

Human adaptation ——▶ Homology break points ——▶ Furin cleavage site ——▶ Research capabilities ——▶ Research underway ——▶ Scenario

(U) NOTABLE VIRUS FEATURES

(U) Adaptation to humans early in the outbreak: computational receptor binding study

Table 4. Binding energies of SARS-CoV-2 spike protein to ACE2 of selected species and potential species susceptibilities from other studies

Species	Binding energy kcal/mol	MMPBSA energy kcal/mol	COVID infectivity n/a = not assessed
Homo sapiens (human)	-52.8	-57.6	Permissive, high infectivity, severe disease in 5-10%,
Manis javanica (pangolin)	-52.0	-56.5	Permissive
Canis luparis (dog)	-50.8	-49.5	Permissive, low infectivity, no overt disease
Macaca fascicularis (monkey)	-50.4	-50.8	Permissive, medium infectivity, lung disease
Mesocricetus auratus (hamster)	-49.7	-50.0	Permissive, high infectivity, lung disease
Mustela putorius furo (ferret)	-48.6	-49.2	Permissive, medium infectivity, mild disease
Felis catus (cat)	-47.6	-48.9	Permissive, high infectivity, lung disease
Panthera tigris (tiger)	-47.3	-42.5	Permissive, overt respiratory symptoms
Rhinolophus sinicus (bat)	-46.9	-49.6	n/a
Paguma larvata (civet)	-45.1	-46.1	n/a
Equus ferus caballus (horse)	-44.1	-49.2	Permissive, low infectivity, no overt disease
Bos taurus (cow)	-43.6	-42.5	n/a
Ophiophagus hannah (snake)	-39.5	-52.5	n/a
Mus musculus (mouse)	-38.8	-39.4	n/a

(b)(3):50 USC 3024(i)

Piplani et al. In silico comparison of spike protein-ACE2 binding affinities across species; significance for the possible origin of the SARS-CoV-2 virus. arXiv 2020.

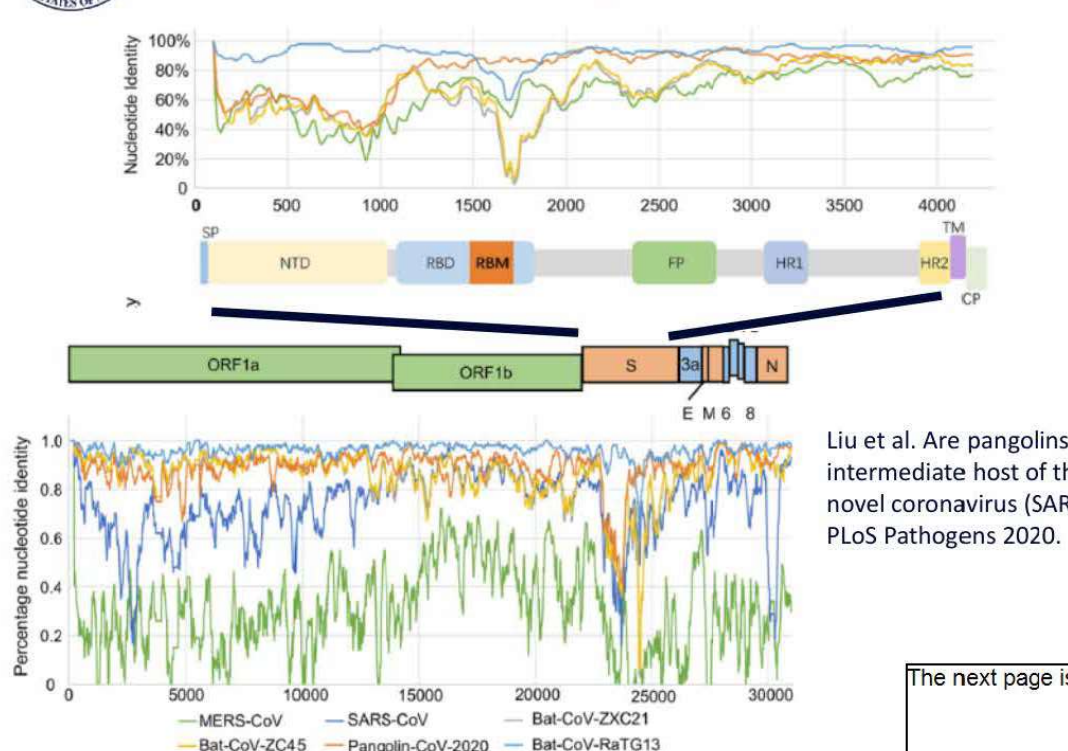Human adaptation → Homology break points → Furin cleavage site → Research capabilities → Research underway → Scenario

(U) NOTABLE VIRUS FEATURES

(U) Similar to bat and pangolin coronaviruses in different regions

Liu et al. Are pangolins the intermediate host of the 2019 novel coronavirus (SARS-CoV-2)? PLoS Pathogens 2020.

(U) "In the region of nucleotides 1-914, Pangolin-CoV is more similar to Bat SARSr-CoV ZXC21 and Bat SARSr-CoV ZC45, while in the remaining part of the gene, Pangolin-CoV is more similar to SARS-CoV-2 and Bat-CoV-RaTG13 . . . In particular, the receptor-binding domain of the S protein of Pangolin-CoV has only one amino acid difference from that of SARS-CoV-2. Overall, these data indicate that ==SARS-CoV-2 might have originated as the recombination of a Pangolin-CoV-like virus with a Bat-CoV-RaTG13-like virus.==

Xiao et al. Isolation of SARS-CoV-2-related coronavirus from Malayan pangolins. Nature 2020.

The next page is withheld in full citing (b)(3) 50 USC 3024(i) and is not provided.

Human adaptation → **Homology break points** → Furin cleavage site → Research capabilities → Research underway → Scenario

(U) COULD A LAB HAVE MADE THE VIRUS?

(U) "The Institute [Wuhan Institute of Virology] does not have the capability to design and synthesize a new coronavirus . . . ."(U) China Ministry of Foreign Affairs, press release 5 May 2020

Human adaptation ——▶ Homology break points ——▶ Furin cleavage site ——▶ Research capabilities ——▶ Research underway ——▶ Scenario

(U) CORONAVIRUS RESEARCH NETWORK
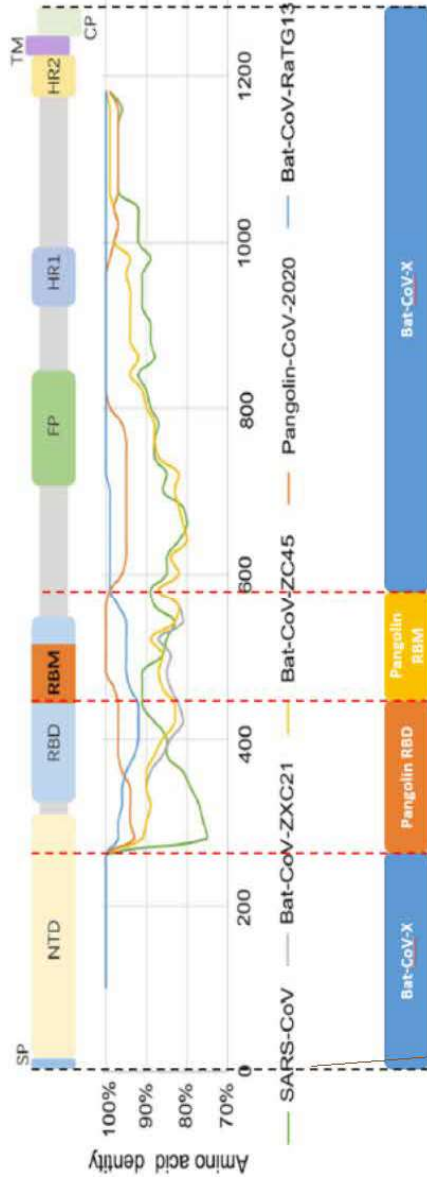
[research network graph]

The next page is withheld in full citing (b)(1) and (b)(3) 50 USC 3024(i), and is not provided.

Human adaptation ——▶ Homology break points ——▶ Furin cleavage site ——▶ Research capabilities ——▶ Research underway ——▶ Scenario

(U) PREVIOUS WIV RESEARCH IN RELATION TO SARS-COV-2

(U) Example: Identification of specific mutations that enable bat CoV to infect human cells (2008)
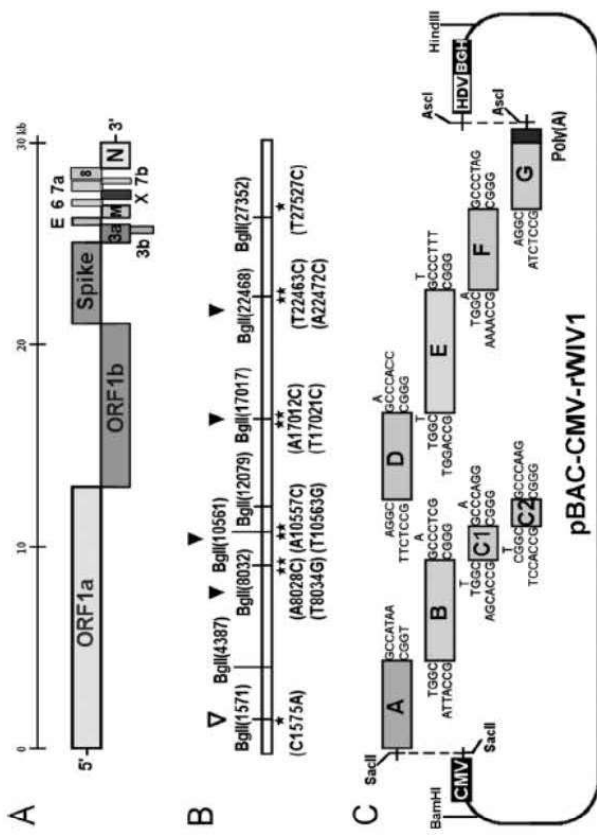

Ren et al. Difference in receptor usage between Severe Acute Respiratory Syndrome (SARS) Coronavirus and SARS-Like Coronavirus of bat origin. J Virol 2008.

(b)(3):10 USC 424; (b)(1);
(b)(3):50 USC 3024(i); Sec.
1.4(c); Sec. 1.4(e); (b)(6)

Human adaptation ——▶ Homology break points ——▶ Furin cleavage site ——▶ Research capabilities ——▶ Research underway ——▶ Scenario

(U) PREVIOUS WIV RESEARCH IN RELATION TO SARS-CoV-2

(U) Example: Method for synthesizing bat CoV WIV1 (reverse genetics system; 2016)

A

B

C

pBAC-CMV-rWIV1

(U) "Strategy for construction of an infectious WIV1 BAC clone."

(U "In this study, we have developed a fast and cost-effective method for reverse genetics of coronaviruses by combining two approaches developed by others. Our method allows the genomes of coronaviruses to be split into multiple fragments and inserted into a BAC plasmid with a single step . . . As the genomes can be divided into multiple short fragments, mutations can be introduced into individual fragments easily."
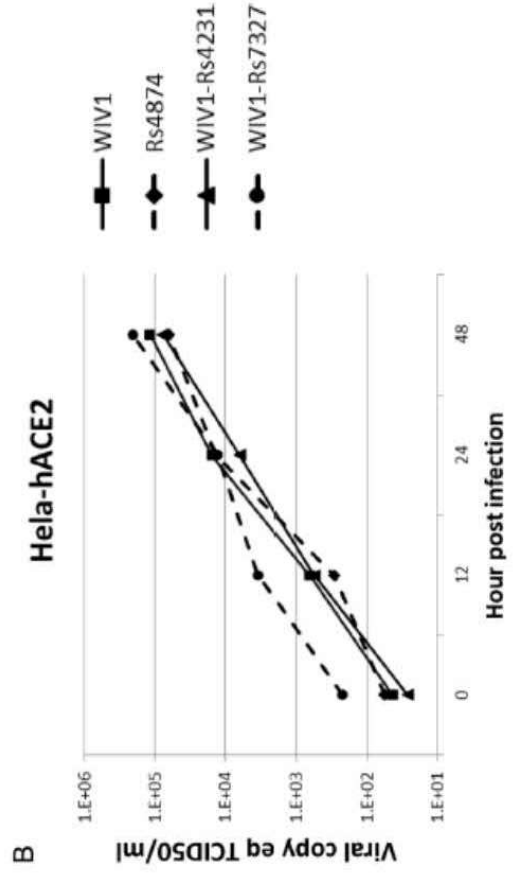
Zeng et al. Bat Severe Acute Respiratory Syndrome-Like Coronavirus WIV1 encodes an extra accessory protein, ORFX, involved in modulation of the host immune response. J Virol 2016.

Human adaptation ——▶ Homology break points ——▶ Furin cleavage site ——▶ Research capabilities ——▶ Research underway ——▶ Scenario

(U) PREVIOUS WIV RESEARCH IN RELATION TO SARS-CoV-2

(U) Figure: Construction of chimeras with spike from new bat CoVs on WIV1 backbone, infection studies (2017)

B

Hela-hACE2

- WIV1
- Rs4874
- WIV1-Rs4231
- WIV1-Rs7327

Viral copy eq TCID50/ml

Hour post infection

(U) Synthetic chimera infection of cells with human receptor.

(U "In this cave, we have now obtained full-length genome sequences of additional 11 novel SARSr-CoVs from bats . . . Using the reverse genetics technique we previously developed for WIV1, we constructed a group of infectious bacterial artificial chromosome (BAC) clones with the backbone of WIV1 and variants of S genes from 8 different bat SARSr-CoVs."
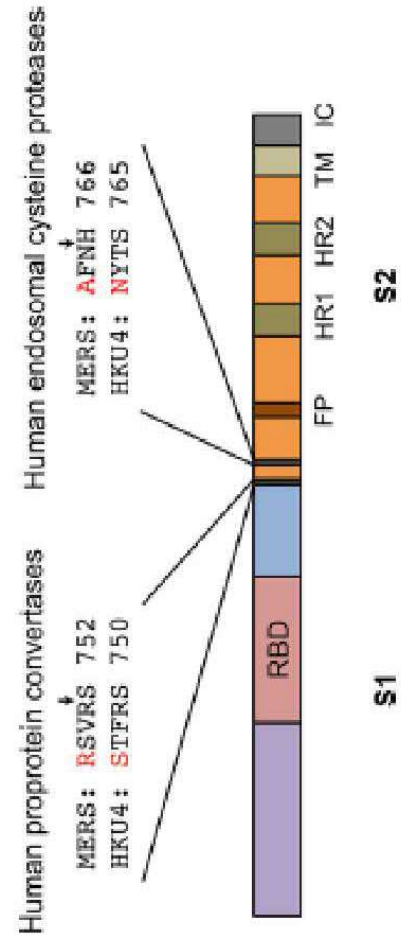
Hu et al. Discovery of a rich gene pool of bat SARS-related coronaviruses provides new insight into the origin of SARS coronavirus. PLoS Pathogens 2017.

Human adaptation → Homology break points → Furin cleavage site → Research capabilities → Research underway → Scenario

UNCLASSIFIED

(U) PREVIOUS WIV RESEARCH IN RELATION TO SARS-CoV-2

(U) Example: Insertion of furin cleavage site enabling bat CoV (MERS-CoV progenitor) to infect human cells (2015)

Human proprotein convertases

MERS: RSVRS 752
HKU4: STFRS 750

Human endosomal cysteine proteases

MERS: AFNH 766
HKU4: NYTS 765

RBD

S1

FP   HR1   HR2   TM   IC

S2

(U) MERS-CoV and bat CoV HKU4 spike proteins.

(U) " . . . the two mutations adaptive to human cellular proteases transformed MERS-CoV spike from completely lacking to fully possessing the capacity to mediate viral entry into human cells, and thus they likely played the most critical role in the bat-to-human transmission of MERS-CoV, either directly or through intermediate hosts."

Yang et al. Two mutations were critical for bat-to-human transmission of Middle East Respiratory Syndrome coronavirus. J Virol 2015.

The next 3 pages are withheld in full citing (b)(1) and (b)(3) 50 USC 3024(i), and are not provided.

Human adaptation ——▶ Homology break points ——▶ Furin cleavage site ——▶ Research capabilities ——▶ Research underway ——▶ Scenario
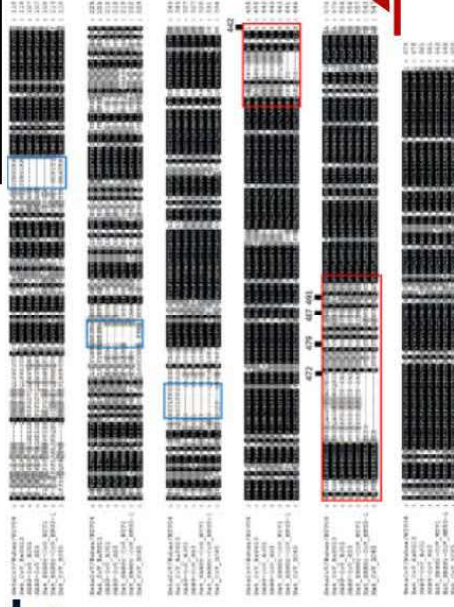
(U) CHINESE GENOME REPORT

(U) We have questions

- (U) No mention of furin cleavage site in original report.(U) Reference to BatCoV RaTG13 in original report does not mention a virus reported by WIV in 2016 BatCoV/4991, with identical RdRp sequence (i.e., RaTG13=4991?).(U) WIV identified BatCoV/4991 in cave expedition following fatal pneumonia outbreak among miners in 2012 (Ge et al., 2016); no scientific reports of cause of the outbreak.

Live samples of RaTG13 or 4991 not known to exist.(U) Large-scale contamination evident in pangolin sequences (Zhang et al., 2020).

SARS-CoV-2 Furin cleavage site

Zhou et al. A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature 2020.

(b)(1); (b)(3):50 USC 3024(i); Sec. 1.4(c); Sec. 1.4(e)

Hypothetical Laboratory Origin of SARS-CoV-2

WIV conducted a longitudinal studies to isolate a large number of bat Coronaviruses from multiple locations in China (2011-2015)WIV Developed Reverse Genetic System, assembled WIV1 full-length infectious clone, and created chimeric viruses exchanging the WIV1 spike gene with the spike gene from other bat Coronaviruses (2015-2017)WIV and other Chinese scientists conduct gain of function studies on SARS, MERS, IBV, and PEDV to insert furin cleavage sites demonstrating increased virulence of the chimeric virusesWIV conducted in vivo and in vitro studies to characterize the bank of bat CoronavirusesWIV conducted the live bat Coronavirus studies under BSL2 conditionsHypothesis: Between 2017 and 2019, WIV created a full-length infectious clone in pBAC-CMV using an unpublished bat Coronavirus genome as template (BatCoVX)Hypothesis: Between 2017 and 2019, WIV created chimeric Bat-CoV-X viruses using the pBAC-CMV-BCoVX backbone and swapping out key cassettes with other bat Coronaviruses (RBD, RBM, etc.) and adding additional features such as a furin cleavage siteHypothesis: In 2018-2019, WIV conducted in vitro and in vivo studies to characterize the BatCoVX chimeric viruses under BSL2 conditionsHypothesis: In mid-2019, one of the not fully characterized Bat-CoV-X chimeric viruses escaped from the WIV facilities and begins infecting civilians in the city of WuhanHypothesis: Starting in mid-2019 through present, WIV and other Chinese laboratories conduct studies to characterize the Chimerc BCoVX virus that escaped (now called SARS-CoV-2)WIV (Zhou et al., 2020) publishes the 2019-nCoV genome sequence showing relatedness to RaTG13 (a previously unpublished genome)BatCoVX likely highly related to RaTG13Hypothesis: Beginning in early 2020, WIV and other government controlled agencies begin to publish obfuscation information to drive the narrative that SARS-CoV-2 is of natural origin and resulted from natural recombinationRaTG13RMYN02Pangolin CoV's

Concluding Points

WIV possesses a bank of Bat Coronavirus isolatesWIV has scientists experienced in Coronavirology and Coronavirus Infectious Clone generationWIV Scientists generated chimeric SARS CoV and Bat CoV Spike genes to identify minimal Spike Receptor Binding Domain cassette that could transfer receptor binding specificity (Ren et al., 2008)WIV possesses an existing and published Coronavirus Reverse Genetics System (Zeng et al., 2016) utilizing their pBAC-CMV plasmidWIV has utilized the pBAC-CMV-WIV1 Full-length clone to generate chimeras with Bat CoV spike genes (Hu et al., 2017)WIV has BSL2/BSL3/BSL4 animal facilitiesWIV has multiple in vitro assays (apoptosis, IFN-B induction, etc.) to characterize their Bat Coronaviruses and chimeric Bat CoronavirusesWIV and other Chinese researchers have conducted Gain of Function studies in SARS, MERS, IBV, and PEDV to add Furin Cleavage Sites to CoV Spike proteinThe absence of a published progenitor virus for SARS-CoV-2 only indicates that it has not been published, not that it does not existThe genomic sequence of SARS-CoV-2 has Type IIS restriction sites that are consistent with being generated by the Golden Gate Cloning system utilizing the published pBAC-CMV plasmidThe SARS-CoV-2 genome has several break points where homology jumps from Bat Coronaviruses to Pangolin Coronaviruses which is consistent with a synthesized chimeric virusThe SARS-CoV-2 Spike protein similarity with RaTG13 and Pangolin CoV Spike proteins may also be explained by use of cassettes swapped into the base virus – these break points align with those identified by WIV scientists (Ren et al., 2008)There are no other published Betacoronaviruses that possess a Furin Cleavage Site in their Spike protein (RmYN02 does not have an insertion)Zeng et al., 2016 stated that "All experiments using live virus was conducted under biosafety level 2 (BSL2) conditions" which would make an accidental release of a pathogenic Bat CoV capable of binding human ACE2 more likelyA chimeric virus comprised of segments from natural Bat CoV genomes would appear like a recombined virus

The molecular biology capabilities of WIV and the genome assessment are consistent with the hypothesis that SARS-CoV-2 was a lab-engineered virus that was part of a bank of chimeric viruses in Zhen-Li Shi's laboratory at WIV that escaped from containment

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