

CSIRO
ABN: 41 687 119 230
Australian Animal Health
Laboratory, 5 Portarlington
Road, Geelong, Vic. 3220.
Australia

COLLABORATIVE PROJECT AGREEMENT



Collaborator :- Defence Science and Technology Group (DSTG) ABN: 68706814312		CSIRO Technical Contact: 47F	CSIRO Contract Manager: 47F 47F
Slazana Cordina Program Manager – Border Security and Identity Management F2-01-082, 24 Scherger Drive, Canberra Airport, ACT 2609 Tel: +61 2 6128 6401 Fax: Email: Slazana.Cordina@dst.defence.gov.au	47F Tel: +61 3 47F Fax: Email: 47F@csiro.au	47F Tel: +61 3 47F Fax: +61 3 5227 5555 Email: 47F@csiro.au	
Project Details			
Project	Coronavirus Survivability Project Both parties have a strong interest in understanding more about the survivability of the COVID-19 virus and have agreed to develop this Collaborative Project Agreement as the framework for agreed activities over the duration of this agreement. It is intended that a statement of works (SoW) will be agreed to, within 3 months of the signing of this agreement and that SoW, will detail the agreed collaborative activities that both Parties agree to contribute.		
Contributions	It is intended that the Total project costs will be met equitably by both DSTG and AAHL and more described in the agreed SoW, that initial SoW and any variations, will be attached to this agreement This includes but not limited to: DSTG Contributions: <ol style="list-style-type: none"> \$150,000.00 (cash) in support of the purchase of: <ul style="list-style-type: none"> 4 x Memmert Incubators - HPP110 HVO BSL-4 suits required for staff handling SARS-CoV-2 at PC4 containment Gelaire BSCII cabinet to be housed in the PC4 suite Automated cell counter Spin/desalting columns Consumables Provision of identified DSTG Staff to assist CSIRO with Studies and other activities as agreed. CSIRO: <ol style="list-style-type: none"> Access to BSL 3 and 4 Containment facilities, to conduct studies as agreed Training of DSTG Staff at AAHL to allow staff to be able to work at the approved BSL Level. 		
Application Area	The Research will allow both DSTG and CSIRO to understand more about the COVID-19 Virus and develop protocols that they can share within their own organisation but also Partner Organisations/ Countries.		
CSIRO Background IP	Refer Appended SoW		
DSTG Background IP	Refer Appended SoW		
Term	Start Date: 13 MARCH 2020 End Date: 12 months after the signing of this agreement by Both Parties, terms can be extended by 12 months at a time, by mutual agreement		
Payment			

Date: 13 March 2020

Fee	AU \$150,000 ex GST is the cash Contribution that CSIRO will provide for the purposes of the Collaborative Project
Additional Expenses	To be discuss and agreed between both Parties
Payment Terms	CSIRO will provide a tax invoice for the DSTG contribution upon signing of this agreement by both Parties.

This proposal to enter into an Agreement (which will consist of this cover page, the terms overleaf and any attachments) is valid for 60 days from the date shown at the top of this cover page. To accept this proposal, please have your authorised representative sign below and return all pages of the Agreement to Chris Morrissy via email Christopher.morrissy@csiro.au; or post to CSIRO, Australian Animal Health Laboratory, Private Bag 24, Geelong, 3220, Victoria, Australia.

By signing below you
of the Collaborator.

the Agreement and that you are authorised to sign on behalf

CSIRO

by

47F

on

13 MAR 2020

as authorised by

Defence Science and
Technology Group
(DSTG)

by

47F

on

13 March 2020

TERMS

1. Definitions

'Background IP' means inventions, ideas, concepts and know-how or other IP possessed, conceived or developed by CSIRO or the Collaborator independently of the Project which is made available to the Project.

'Commercialisation' means to exploit IP by way of granting a license or licenses, and / or participating in the formation of a start-up company, and / or procuring an assignment of the IP.

'Confidential Information' means all information in any form or media, which is by its nature confidential or which either of use identify as confidential and all copies, notes and records made of such information. Information is not confidential if it is: (i) in the public domain (other than by a breach of this Agreement); (ii) rightfully known by CSIRO before disclosure by the Collaborator or rightfully known by the Collaborator before disclosure by CSIRO; or (iii) independently created by CSIRO or by the Collaborator without access to each other's confidential information.

'Contributions' means the contributions that either CSIRO or the Collaborator will make to the Project as identified in the Project Details and includes materials, data, technology and Background IP.

'CSIRO' means the Commonwealth Scientific and Industrial Research Organisation ABN 41 687 119 230, having its principal office at CSIRO Black Mountain Science and Innovation Park, Clunies Ross Street, Acton ACT 2601, Australia.

'Invention' means any discovery, innovation or invention (whether or not patentable) jointly made by the parties during the course of and as a result of conducting the Project.

'IP' means any rights in any existing or future copyright work, patentable invention, design, circuit layout, new plant variety, trademark, know-how or trade secret.

'Personnel' means the officers, employees, agents and contractors of either CSIRO or the Collaborator.

'Project' means the research project to be carried out by CSIRO and the Collaborator as identified in the Project Details.

'Project IP' means any IP developed in the course of carrying out the Project, excluding any Background IP.

Other capitalised expressions used in this Agreement have the meanings given to them in the cover page.

2. Contributions

2.1 CSIRO and the Collaborator will carry out the Project with professional care and skill and will make their Contributions in accordance with the Project Details.

2.2 The knowledge and skills that will be used by CSIRO and the Collaborator to perform the Project have been developed in the course of their respective research and business activities. CSIRO and the

Collaborator may develop further knowledge and skills while carrying out the Project. CSIRO and the Collaborator can use such general knowledge and skills in any dealings with third parties and in other projects.

2.3 If access to CSIRO or the Collaborator premises is required for the purposes of the Project then it is the responsibility of the occupant of those premises to ensure that visiting Personnel are informed of the health, safety and security policies for those premises. CSIRO and the Collaborator will instruct their Personnel to comply with all applicable laws and any reasonable directions as to health, safety and security when visiting such premises. CSIRO and the Collaborator must ensure that staff and any equipment used for the Project are insured.

2.4 Where requested by the other, CSIRO or the Collaborator must obtain written undertakings from their Personnel to comply with this Agreement and each must ensure that their Personnel do so comply.

2.5 If a Contribution to the Project involves the exchange of any materials, samples or data, then the provider of those Contributions must ensure that they are: (i) safely transported to and from its laboratories; (ii) suitably packaged; (iii) labelled with contact details; and (iii) labelled with appropriate safety warnings or instructions for their handling, testing, storage, transportation, return and disposal. The party supplying the materials must advise the other party of any hazardous or otherwise dangerous components of properties of the materials

2.6 Subject to clause 3, CSIRO and the Collaborator each bear their own costs associated with their participation in the Project.

3. Payment

3.1 The Collaborator must pay CSIRO the Fee (and any Additional Expenses) in accordance with the Payment Terms. If payment is to be made in full upfront then CSIRO will not make its Contributions until such payment is received. If payment is to be made by instalments following receipt of invoices from CSIRO and the Collaborator does not pay any invoice on time then CSIRO may stop making its Contributions until the outstanding amount is paid.

3.2 All invoices issued by CSIRO must be paid within 30 days after the invoice date. If an invoice is not paid on time then the Collaborator must pay interest on the outstanding amount. Interest is calculated daily at the NAB Benchmark Rate plus 2% per annum from the due date until the date the outstanding amount is paid.

3.3	For GST purposes the cover page and any receipts issued by CSIRO are tax invoices. Any additional invoices issued by CSIRO will be in the form of a tax invoice.	other means, CSIRO and the Collaborator must negotiate the terms for any other use of the jointly developed Project IP including rights to sub-licence to third parties.
4. Working Together		
4.1	CSIRO and the Collaborator will ensure that: (i) they provide each other with any information that may reasonably be required by the other to carry out the Project; (ii) Contributions are provided on time and in an appropriate condition; and (iii) any milestones are met.	
4.2	If CSIRO or the Collaborator cannot make any Contribution in accordance with the Project Details then they must: (i) notify each other in writing of the delay; (ii) provide an estimate of when the Contribution will be provided; and (iii) suggest alternative arrangements.	
4.3	CSIRO and the Collaborator have the right, either alone or in association with others, to conduct research independent of the Project and of each other within or outside the Application Area without being required to account to the other in any way.	
5. IP Rights		
5.1	CSIRO and the Collaborator will retain ownership of all rights to their Background IP, including any incremental improvements or enhancements to such Background IP made in the course of carrying out the Project.	
5.2	CSIRO and the Collaborator each grant the other a royalty-free, non-exclusive, non-transferable right to use their Background IP to the extent necessary to carry out the Project.	
5.3	Subject to clause 5.1, IP developed solely by CSIRO or the Collaborator will be owned by whoever develops it. The owner of the IP has the absolute discretion to decide whether that IP will be: <ul style="list-style-type: none"> (a) retained as Confidential Information; (b) included in any patent application or other application for registered IP protection; (c) made available as part of the Project; or (d) dealt with in any other manner. 	
5.4	Subject to clause 5.1, any jointly developed Project IP will be owned equally by CSIRO and the Collaborator as tenants in common.	
5.5	CSIRO and the Collaborator can use any jointly developed Project IP for their own internal research and teaching purposes and to provide consulting services to third parties, provided the exercise of such rights does not prejudice the parties or a party protecting the Project IP by patenting or	
5.6		Both parties agree that CSIRO will have the first right to lead any Commercialisation or exploitation of the Project IP
6. Protection of jointly developed Project IP		
6.1		A party (the 'First Party') must promptly notify the other party (the 'Other Party') of any jointly developed Project IP that is a patentable invention and if they wish to pursue patent protection in relation to that invention.
6.2		On receipt of any such a notification, the Other Party must advise the First Party within six weeks (the 'Response Period') if the Other Party wishes to jointly pursue patent protection of the invention with the First Party. If the Other Party does not reply within the Response Period, then the First Party may pursue patent protection and file the patent application in its own name.
6.3		If the parties agree to pursue patent protection for any invention then the parties will nominate which party is to file (the 'Filing Party') and: <ul style="list-style-type: none"> (a) the patent application will be filed in the joint names of the parties; (b) the provisional specification and the initially filed complete specification must be written in English; (c) the Filing Party must give the other party a reasonable amount of time to review, and comment on, all correspondence between the Filing Party and the patent attorney or patent offices; and (d) unless otherwise agreed, costs incurred by the Filing Party must be borne by the parties equally.
6.4		Each party must provide the other party with not less than least three months written notice prior to the relevant deadline if the party resolves that it does not intend to fund an approaching filing, prosecution or maintenance action in respect of a patent or other protection, including all possible national phase entries in respect of a PCT application and the possible filing of an application under the Paris Convention.
6.5		If one party wishes to file a patent application in respect of an invention but the other party does not, then that party may require the proposed filing of a patent application in respect of the invention to be delayed for a period of six (6) months (the 'Delay Period') and the parties will:

- (a) keep the invention confidential during the Delay Period; and
- (b) reassess whether a patent application should be filed at the end of the Delay Period.

6.6 If only one party wishes to file a patent application in respect of an invention and the other party does not wish to do so, then, subject to there being no disclosure of the other party's Confidential Information, the first mentioned party may file and prosecute the patent application in its own name and at its own cost.

7. Notice of Infringements

- 7.1 During the term of this Agreement, CSIRO and the Collaborator will give the other notice of:
- (a) any claim or allegation that the exercise of rights under this Agreement infringes the IP rights of any third party; and
 - (b) any third party's infringement or threatened infringement of the others' respective Background IP or Project IP of which it becomes aware.

8. Confidential Information

- 8.1 Confidential Information is to be kept confidential for a period of 5 years commencing on the date of this Agreement.
- 8.2 CSIRO and the Collaborator must treat the terms of this Agreement and all Confidential Information owned by the other as confidential and must not, without the prior written consent of that other, disclose or permit the same to be disclosed to any third party, permit the same to be disclosed to any third party, except that both CSIRO and the Collaborator may disclose such information (on a confidential basis): (a) to the extent necessary to comply with a requirement or request of its responsible government Minister or a House of Parliament or Committee of Parliament; or (b) to a responsible authority if CSIRO, acting reasonably, deems the information to expose or relate to a potential risk to public or environmental health and safety.
- 8.3 CSIRO and the Collaborator each undertake to promptly notify the other:
- (a) if they become aware of any unauthorised use or disclosure of the Confidential Information belonging to the other; or
 - (b) if they are required by law to disclose any Confidential Information belonging to the other.
- 8.4 CSIRO and the Collaborator must ensure that their employees, officers and agents comply with the obligations of confidentiality imposed by this clause 8.

9. Limitation of Liability

- 9.1 CSIRO and the Collaborator do not give any warranties in relation to the Project, their respective Contributions or the outcomes of the Project. CSIRO and the Collaborator exercise the rights granted to them under this Agreement at their own risk.
- 9.2 CSIRO and the Collaborator will not be liable to the each other for any indirect or consequential damage suffered by the other in any way arising from their involvement in the Project.

10. Dispute Resolution

- 10.1 Any dispute, controversy or claim arising out of or in connection with this Agreement, including its existence, breach, validity or termination ('Dispute') must be dealt with in accordance with this clause. This clause does not prevent either party from seeking urgent injunctive or similar interim relief from a Court.
- 10.2 Either party claiming that there is a Dispute must notify the other party in writing and give details of that Dispute to the other's contact person specified in the cover page.
- 10.3 If the Dispute is not resolved within 90 days from the date that the written notice of the Dispute is received, then the Dispute must be submitted to mediation in accordance with, and subject to, the Resolution Institute Mediation Rules. The mediation must take place in Sydney, Australia and be administered by the Resolution Institute.
- 10.4 If the Dispute cannot be resolved within 90 days (unless this period is extended by mutual agreement in writing by the parties) from the date it is submitted for mediation, then the Dispute must be resolved by arbitration in accordance with the Resolution Institute Arbitration Rules 2016.
- 10.5 There is to be one arbitrator and the place of arbitration is Sydney, Australia. Unless the parties agree upon an arbitrator, either party may request a nomination from the Chair of the Resolution Institute. All hearings will take place in private unless agreed otherwise in writing. The decision of the arbitrator (including any award as to costs) will be final and binding. CSIRO may, if required, disclose any information regarding the arbitration to its responsible government Minister, House of Parliament or a Committee of Parliament.

11. Termination

- 11.1 This Agreement begins on the Start Date and terminates on the End Date subject to its earlier termination under this clause 11.
- 11.2 This Agreement can be terminated at any time by either CSIRO or the Collaborator

giving written notice if there is a breach and that breach is not remedied within 30 days after written notice is received.

- 11.3 CSIRO or the Collaborator may terminate this Agreement for convenience at any time on thirty (30) days written notice.

12. Publication and Use of Names

- 12.1 CSIRO and the Collaborator must request and receive written approval from the other prior to publishing any paper or papers relating to the Project. A reply to a request to publish must occur within 30 days. CSIRO and the Collaborator will not withhold approval except where the publication may prejudice rights to IP or Confidential Information.

- 12.2 Neither party may use the name, logo, trademarks or any other identifier of the other party for any purpose without its prior written consent.

- 12.3 CSIRO and the Collaborator must not knowingly make or permit to be made any inaccurate or misleading statement concerning each other or the Project in any publication or discussion relating to the Project.

13. General

- 13.1 This Agreement records our entire agreement and supersedes all earlier

agreements and representations that may have been made by CSIRO or the Collaborator in relation to the Project.

- 13.2 The terms of this Agreement override any contrary terms contained in any invoice, purchase order or other documentation issued by either CSIRO or the Collaborator in relation to the Project.

- 13.3 This Agreement is governed by the law applicable to the State or Territory given in the address shown in the top left corner of the cover page.

- 13.4 If any term of this Agreement is prohibited, void or unenforceable under any applicable law, it will be severed to the extent necessary to make this Agreement valid and enforceable. The severance of a term will not affect the validity or enforceability of the remaining terms of this Agreement.

Statement of Works (SoW)

Activity #

Agreed Activities	Coronavirus Survivability Project
Start Date	
End Date	
Application Area as agreed by Both Parties	The Research will allow both DSTG and CSIRO to understand more about the COVID-10 Virus and develop protocols that they can share within their own organisation but also Partner Organisations/ Countries.
CSIRO Background IP contributed to Activity	
DMTG Background IP contributed to Activity	

Statement of Works Activity # agreed to by both Parties

CSIRO by on

Defence Science and Technology Group (DSTG) by on

ANNEX A

Project proposal – Survivability/inactivation/disinfectant testing for SARS-CoV-2

Virus Preparation

AAHL currently holds a number of Australian SARS-CoV-2 isolates with isolates from overseas (USA, Germany and France) expected to arrive soon.

Chosen SARS-CoV-2 isolates will be propagated to a sufficiently high titre to show a >4 log reduction as a result of exposure to the test substance or environmental condition. This is the minimum standard for acceptance of results for disinfectant studies by regulatory authorities globally. The 4 log reduction is over and above any toxicity observed by the test substance to the susceptible cell line and in general, a >6 log titre is required to achieve this.

Growth characteristics, whole genome sequencing (and any observed genetic variation) and geographical source, will all be considered in determining which isolate/s will be utilised for this study.

Environmental survivability.

1cm diameter brushed stainless steel carrier discs will be used for initial survivability studies, these discs are part of ASTM standard protocols for disinfectant testing.

Virus will be diluted in an organic soil load (BSA, Mucin, Tryptone), designed to mimic the protein composition and concentration of 5% serum. 50µL of virus will be inoculated onto the centre of the carrier disc and dried at room temperature for 2hrs prior to being placed into the test condition. At each time point, 3 discs (triplicate) will be removed and the virus resuspended in tissue culture medium and titrated on a 96-well plate to quantify the infectivity of the virus. Initially, 45 carrier discs will be used for each temperature/humidity point and sample every second day for 30 days.

Initial humidity testing will involve a low, mid and high relative humidity (proposed 20%, 50% and 80%), and temperatures will also include a low, mid and high point (eg 10C, 21C and 37C).

Evaluation of virus survival on substrates, such as plastic and fabric, across the same matrix of environmental conditions, can also be conducted.

Inactivation

A range of commonly used disinfectants (such as Ethanol, Virkon, hyperchlorite, F10SC) will be evaluated for efficacy. This testing involves a similar methodology as the survivability testing, with the virus dried on the stainless steel carrier discs, the disinfectant applied and left for appropriate time, then recovered and titrated. Often the disinfectant is toxic to the cell lines but can be removed via desalting/size exclusion columns (with the loss of approx. 1 log of virus). This testing is slightly longer to set up (4-5hrs), but with only 1 sampling point (setting up TCID₅₀) so results are available in approx. 1 week vs several weeks for a survivability study.

AAHL is also considering evaluation of the following: efficacy of nucleic acid inactivation buffers, formalin fixation in tissues/monolayers, acetone fixation, heat inactivation, protein purification with SDS/MOPS type buffers etc.

ANNEX B

Project proposal – Survivability/inactivation/disinfectant testing for SARS-CoV-2

Proposed equipment with itemised costs and justifications:

Memmet Climate incubator x 4 110L (\$18,000each, \$72,000 total)

In order to more accurately conduct the survivability studies, we propose purchasing 4 x Memmet Climate incubators. These incubators are capable of accurately maintaining a temperature range from 10°C to 90° and humidity range from 20%RH to 90%RH and having more than one allows us to do survivability studies in parallel at different temperatures and humidity's using the same source virus reducing variability. This model of incubator is capable of holding of temperature/humidity at set points for the duration of experiments to give more consistent results for environmental survivability.

HVO BSL-4 Suits x 5 (~2600 Euro each, ~\$22,000 in total)

AAHL is currently handling (for any studies involving live virus) SARS-CoV-2 at PC4 containment so the purchase of more HVO BSL-4 suits will be required for staff conducting the studies to wear while handling the virus to ensure uninterrupted access to the PC4 laboratories (noting that with the additional workload and staff in PC4, additional suits are required to meet demand).

Gelaire BSCII Cabinet (\$26000), Evos XL core microscope (\$9000), 4 x Pipettes (VIAFLO electronic) with charging stand (\$7000)

Currently the AAHL PC4 suite is in high usage, and the 5 BSCII cabinets in the lab are in constant usage for diagnostic and research work. The additional BSCII, pipettes and microscope will allow uninterrupted access for the survivability/disinfectant studies.

Hydrogen Peroxide Generator (\$100,000)

The hydrogen Peroxide generator will be used to assess the ability of standard decontamination methods to inactivate SARS-CoV-2. Hydrogen Peroxide has replaced the use of Formaldehyde in almost all European countries and is also used by hospitals (such as infectious disease wards) and pharmaceutical companies worldwide as it provides a rapid kill as well as no remaining residue. Our studies could look at inactivation in a BSCII in a laboratory setting, as well as also in a primary containment animal room to simulate more of a 'real world' situation.

Spin/desalting columns (200) (\$2000)

The desalting columns will allow for the removal of toxic disinfectants/inactivation buffers from the viral preparations to allow for more accurate titration of virus to assess inactivation efficacy. In general, disinfectants are toxic to cell monolayers between 10⁻¹ and 10⁻³ dilutions, which prevents any analysis for residual infectious virus particles at these concentrations.

Automated cell counter \$5000

The cell counter will be used to accurately and rapidly count cells for use in titrations/passaging and any applications where accurate cell numbers are required (ie. Multiplicity of Infection MOI).

Item	Number Required	Per Item Cost	Total Cost
Memmet Climate incubator	4	\$18 000	\$72 000
Pipettes + charging stand			\$7 000
Automated Cell Counter			\$5 000
HVO BSL-4 Suits	5	\$4 400	\$22 000
Evos XL core microscope			\$9 000
Gelaire BSCII			\$26 000
Hydrogen Peroxide Generator			\$100 000
Spin/desalting columns (200)			\$2 000
Consumables			\$5 000
Total			\$248 000

Sandeman, Ruth

From: Coia, Greg
Sent: Friday, 13 March 2020 5:22 PM
To: 47F (AAHL, Geelong AAHL)
Subject: RE: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

Categories: UNCLASSIFIED

UNCLASSIFIED

This testing thing is rapidly moving 47F. Our Surgeon General is pushing it hard!
Do I need to speak to VIDRL at some stage for advice?
Maybe we chat on Monday about this one.

IMPORTANT: This email remains the property of the Department of Defence and is subject to the jurisdiction of section 70 of the Crimes Act 1914. If you have received this email in error, you are requested to contact the sender and delete the email.

From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Friday, 13 March 2020 5:19 PM
To: Coia, Greg <Greg.Coia@dst.defence.gov.au>; 47F (BD&C, Geelong AAHL) <47F@csiro.au>; Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>
Cc: Davis, Richard <Richard.Davis@dst.defence.gov.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>
Subject: RE: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

Thanks everyone!

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Sent: Friday, 13 March 2020 3:08 PM
To: 47F (BD&C, Geelong AAHL) <47F@csiro.au>; Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; Davis, Richard <Richard.Davis@dst.defence.gov.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>
Subject: RE: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

UNCLASSIFIED

Thanks everyone for moving this so rapidly!

Best wishes,
Greg.



Dr Greg Coia

Research Leader, Chemical and Biological Defence,
Land Division, Defence Science and Technology Group
Building 94, 506 Lorimer Street
Fishermans Bend VIC 3207
P: +61 3 9626 8467 47F
E: greg.coia@dst.defence.gov.au

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From: 47F (BD&C, Geelong AAHL) <47F@csiro.au>
Sent: Friday, 13 March 2020 2:46 PM
To: Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; Davis, Richard <Richard.Davis@dst.defence.gov.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Coia, Greg <Greg.Coia@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>
Subject: RE: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

Hi Slazana,

Please find attached a fully executed copy of the agreement for your records.

From here I'll arrange to have the Agreement Loaded onto our Finance system which will allow an invoice to be generated.

You should have the Invoice Early-Mid Nxt week.

Regards

47F
47F
47F | Commercial Contracts (Health and Biosecurity | National Facilities - AAHL |IM&T)
Business Development & Commercial | CSIRO
47F@csiro.au | 47F
Street Address: Australian Animal Health Laboratory (AAHL) , 5 Portarlington Road, Geelong, Victoria, 3220, Australia, | Postal
Address: Private Bag 24, Geelong, Victoria, 3220, Australia.

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the area that we live and work on across Australia. We acknowledge their continuing connection to their culture and we pay our respects to their Elders past and present.

The information contained in this email may be confidential or privileged. Any unauthorised use or disclosure is prohibited. If you have received this email in error, please delete it immediately and notify the sender by return email. Thank you. To the extent permitted by law, CSIRO does not represent, warrant and/or guarantee that the integrity of this communication has been maintained or that the communication is free of errors, virus, interception or interference.

Please note, if I send you an email outside reasonable work hours I'm doing so because it's convenient for me. In the spirit of encouraging work life balance I look forward to a response if appropriate at a time that suits you.

Please consider the environment before printing this email.

CSIRO Australia's National Science Agency | csiro.au

From: Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>

Sent: Friday, 13 March 2020 2:13 PM

To: 47F (BD&C, Geelong AAHL) <47F@csiro.au>

Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; Davis, Richard <Richard.Davis@dst.defence.gov.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Coia, Greg <Greg.Coia@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>

Subject: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

UNCLASSIFIED

Dear 47F

As discussed this afternoon and with your support I have amended Section 8.2 (to include red text "...permit the same to be disclosed to any third party, except that both CSIRO and the Collaborator may disclose such information") under the Terms.

Please find attached a DSTG endorsed Collaborative Project Agreement (CPA). I have attached a signature page, a signed agreement (as noted we were unable to remove the embedded DRAFT watermark on pages 3 to 7) and a word version for your records.

Grateful if you can please send a fully executed CPA with the watermark removed for our records.



Further, given critically of time to secure assets for work, please advise your Finance area to go ahead with invoicing DST using your ABN 41687119230 prior to receipt of a Purchase Order.

Kind regards
Slazana



Slazana Cordina

Program Manager

-  Border Security & Identity Management
-  Preparedness, Protection, Prevention & Incident Response

National Security Science and Technology Centre
Defence Science and Technology Group, Department of Defence
F2-01-082, 24 Scherger Drive, Canberra Airport ACT 2609
Mail: PO Box 7931, Canberra BC ACT 2610 Australia
P: 02 6128 6401 47F
E: Slazana.Cordina@dst.defence.gov.au

Defence Science and Technology acknowledges the Traditional Custodians of the Country throughout Australia. We recognise their continuing connection to land, waters and community. We pay our respects to them, their culture and to their Elders past and present.

IMPORTANT: This email remains the property of the Department of Defence and is subject to the jurisdiction of section 70 of the Crimes Act 1914. If you have received this email in error, you are requested to contact the sender and delete the email.

Sandeman, Ruth

From: Cordina, Slazana
Sent: Friday, 13 March 2020 3:32 PM
To: 47F (BD&C, Geelong AAHL)
Subject: RE: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

Categories: UNCLASSIFIED

UNCLASSIFIED

Hi 47F, yes please go ahead with invoicing DSTG in the amount of \$165k (GST inclusive).

The agreement states \$150k (GST exclusive) – page 2

Cheers
Slazand

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From: 47F (BD&C, Geelong AAHL)
Sent: Friday, 13 March 2020 3:19 PM
To: Cordina, Slazana
Subject: RE: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

Sorry Slazana,

Having a mental blank, do we add GST onto DSTG agreements can you check with your Finance people?

From: Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>
Sent: Friday, 13 March 2020 2:49 PM
To: 47F (BD&C, Geelong AAHL) <47F@csiro.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; Davis, Richard <Richard.Davis@dst.defence.gov.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Coia, Greg <Greg.Coia@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>
Subject: RE: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

UNCLASSIFIED

Wonderful, thank you 47F. Great team work!

Cheers
Slazana

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From: 47F (BD&C, Geelong AAHL) <47F@csiro.au>
Sent: Friday, 13 March 2020 2:46 PM
To: Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; Davis, Richard <Richard.Davis@dst.defence.gov.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Coia, Greg <Greg.Coia@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>
Subject: RE: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

Hi Slazana,

Please find attached a fully executed copy of the agreement for your records.

From here I'll arrange to have the Agreement Loaded onto our Finance system which will allow an invoice to be generated.

You should have the Invoice Early-Mid Nxt week.

Regards

47F
47F
47F Commercial Contracts (Health and Biosecurity | National Facilities - AAHL | IM&T)
Business Development & Commercial | CSIRO
47F@csiro.au | 47F
Street Address: Australian Animal Health Laboratory (AAHL) , 5 Portarlington Road, Geelong, Victoria, 3220, Australia, | Postal Address: Private Bag 24, Geelong, Victoria, 3220, Australia.

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Please note, if I send you an email outside reasonable work hours I'm doing so because it's convenient for me. In the spirit of encouraging work life balance I look forward to a response if appropriate at a time that suits you.

Please consider the environment before printing this email.

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From: Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>
Sent: Friday, 13 March 2020 2:13 PM
To: 47F (BD&C, Geelong AAHL) <47F@csiro.au>
Cc: Eagles, Debbie (AAHL, Geelong AAHL) <Debbie.Eagles@csiro.au>; Davis, Richard <Richard.Davis@dst.defence.gov.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Coia, Greg <Greg.Coia@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>
Subject: CSIRO/DSTG re: COVID19 Collaborative Project Agreement [SEC=UNCLASSIFIED]

UNCLASSIFIED

Dear 47F

As discussed this afternoon and with your support I have amended Section 8.2 (to include red text "...permit the same to be disclosed to any third party, except that both CSIRO and the Collaborator may disclose such information') under the Terms.

Please find attached a DSTG endorsed Collaborative Project Agreement (CPA). I have attached a signature page, a signed agreement (as noted we were unable to remove the embedded DRAFT watermark on pages 3 to 7) and a word version for your records.

Grateful if you can please send a fully executed CPA with the watermark removed for our records.



Further, given critically of time to secure assets for work, please advise your Finance area to go ahead with invoicing DST using your ABN 41687119230 prior to receipt of a Purchase Order.

Kind regards
Slazana



Slazana Cordina

Program Manager

-  Border Security & Identity Management
-  Preparedness, Protection, Prevention & Incident Response

National Security Science and Technology Centre
Defence Science and Technology Group, Department of Defence
F2-01-082, 24 Scherger Drive, Canberra Airport ACT 2609
Mail: PO Box 7931, Canberra BC ACT 2610 Australia
P: 02 6128 6401 47F
E: Slazana.Cordina@dst.defence.gov.au

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Sandeman, Ruth

From: Cordina, Slazana
Sent: Friday, 13 March 2020 10:27 AM
To: 47F (AAHL, Geelong AAHL)
Cc: Coia, Greg; Jenkins, Malcolm (BCO); Thompson, Doris; 47F (BD&C, Geelong AAHL); Waschl, John
Subject: Funding in support of COVID19 [SEC=UNCLASSIFIED]
Categories: UNCLASSIFIED

UNCLASSIFIED

Hi 47F

Given time is critical for the COVID19 project, we have made some enquiries at Defence to see whether we can expedite the transfer of funds to secure the assets for the work while the research agreement is being finalised. Our Finance rep has advised that a direct invoice (without a Purchase Order) from CSIRO could advance the payment.



Grateful if you can please let me know whether this is achievable at your end without an executed Agreement.

Cheers
Slazana



Slazana Cordina

Program Manager

-  Border Security & Identity Management
-  Preparedness, Protection, Prevention & Incident Response

National Security Science and Technology Centre
Defence Science and Technology Group, Department of Defence
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Sandeman, Ruth

From: Cordina, Slazana
Sent: Friday, 13 March 2020 1:11 PM
To: 47F (AAHL, Geelong AAHL); 47F (AAHL, Geelong AAHL);
47F (Finance, Geelong AAHL)
Cc: Coia, Greg; Jenkins, Malcolm (BCO); Thompson, Doris; 47F (BD&C, Geelong AAHL); Waschl, John
Subject: RE: Funding in support of COVID19 [SEC=UNCLASSIFIED]
Categories: UNCLASSIFIED

UNCLASSIFIED

Thank you 47F .

47F, our Contracts area has approved the agreement for signature. I'm planning to get my Chief to sign the Agreement today however I have a question in relation to the contract format and would be grateful to speak to someone from 47F area as I'm unable to get in touch with 47F. Can you please provide a contact?

Thank you
Slazana

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From: 47F (AAHL, Geelong AAHL)
Sent: Friday, 13 March 2020 12:55 PM
To: Cordina, Slazana
Cc: Coia, Greg ; Jenkins, Malcolm (BCO) ; Thompson, Doris ; 47F (BD&C, Geelong AAHL) ; Waschl, John ;
47F (Finance, Geelong AAHL) ; 47F (AAHL, Geelong AAHL)
Subject: Re: Funding in support of COVID19 [SEC=UNCLASSIFIED]

Thanks Slazana.
I'm offsite today but 47F (now copied) may be able to answer this (I'm not sure!).

Sent from my iPhone

On 13 Mar 2020, at 10:27 am, Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au> wrote:

UNCLASSIFIED

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Slazana Cordina

Program Manager



Border Security & Identity Management



Preparedness, Protection, Prevention & Incident Response

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Mail: PO Box 7931, Canberra BC ACT 2610 Australia
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Sandeman, Ruth

From: Cordina, Slazana
Sent: Friday, 13 March 2020 2:43 PM
To: 47F (BD&C, Geelong AAHL)
Cc: 47F (AAHL, Geelong AAHL)
Subject: RE: Funding in support of COVID19 [SEC=UNCLASSIFIED]

Categories: UNCLASSIFIED

UNCLASSIFIED

Thanks 47F .

I had already sent my email with the signed agreement. I'm assuming you are OK with going ahead with the version I send earlier?

Cheers
Slazana

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To: Cordina, Slazana
Cc: 47F (AAHL, Geelong AAHL)
Subject: RE: Funding in support of COVID19 [SEC=UNCLASSIFIED]

Hey Slazana,

I'm back in the office now.

I've update the agreement to get rid of the DRAFT and can you update the clause as discussed.

You note that I've added some extra wording in support of the \$150k contribution, thanks to 47F input.

The idea of the annexure, is that we will populate that, down the track with the agreed Work package and sign at tat time.

If we wish to add work packages, we can simply add another annexure.

Regards

47F
47F
Commercial Contracts (Health and Biosecurity | National Facilities - AAHL | IM&T)
Business Development & Commercial | CSIRO
47F @csiro.au | 47F

Street Address: Australian Animal Health Laboratory (AAHL) , 5 Portarlington Road, Geelong, Victoria, 3220, Australia, | Postal Address: Private Bag 24, Geelong, Victoria, 3220, Australia.

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From: Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>
Sent: Friday, 13 March 2020 1:11 PM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>
Cc: Coia, Greg <Greg.Coia@dst.defence.gov.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>; 47F (BD&C, Geelong AAHL) <47F@csiro.au>; Waschl, John <John.Waschl@dst.defence.gov.au>
Subject: RE: Funding in support of COVID19 [SEC=UNCLASSIFIED]

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Thank you
Slazana

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From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Friday, 13 March 2020 12:55 PM
To: Cordina, Slazana <Slazana.Cordina@dst.defence.gov.au>
Cc: Coia, Greg <Greg.Coia@dst.defence.gov.au>; Jenkins, Malcolm (BCO) <Malcolm.Jenkins2@dst.defence.gov.au>; Thompson, Doris <Doris.Thompson@dst.defence.gov.au>; 47F (BD&C, Geelong AAHL) <47F@csiro.au>; Waschl, John <John.Waschl@dst.defence.gov.au>; 47F (Finance, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: Re: Funding in support of COVID19 [SEC=UNCLASSIFIED]

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Sent from my iPhone

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UNCLASSIFIED

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Grateful if you can please let me know whether this is achievable at your end without an executed Agreement.

Cheers
Slazana

Slazana Cordina

Program Manager



Border Security & Identity Management



Preparedness, Protection, Prevention & Incident Response

National Security Science and Technology Centre
Defence Science and Technology Group, Department of Defence
F2-01-082, 24 Scherger Drive, Canberra Airport ACT 2609
Mail: PO Box 7931, Canberra BC ACT 2610 Australia
P: 02 6128 6401 47F
E: Slazana.Cordina@dst.defence.gov.au

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Sandeman, Ruth

From: Cordina, Slazana
Sent: Tuesday, 17 March 2020 1:07 PM
To: 47F BD&C, Geelong AAHL); 47F (AAHL, Geelong AAHL)
Cc: Coia, Greg; Thompson, Doris; Waschl, John
Subject: Purchase Order - COVID19 Project [SEC=UNCLASSIFIED]
Attachments: Defence Vendor Guide.pdf; PO_4501094606.pdf

Categories: UNCLASSIFIED

UNCLASSIFIED

Hi 47F

Please find attached a Purchase Order (PO) in the amount of \$165k (GST inclusive) and a Fact Sheet.

Please quote PO 4501094606 on your invoice and send to invoices@defence.gov.au for processing.

Kind regards
Slazana



Slazana Cordina

Program Manager

- ✚ Border Security & Identity Management
- ✚ Preparedness, Protection, Prevention & Incident Response

National Security Science and Technology Centre
Defence Science and Technology Group, Department of Defence
F2-01-082, 24 Scherger Drive, Canberra Airport ACT 2609
Mail: PO Box 7931, Canberra BC ACT 2610 Australia
P: 02 6128 6401 47F
E: Slazana.Cordina@dst.defence.gov.au

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Sandeman, Ruth

From: Coia, Greg
Sent: Wednesday, 18 March 2020 12:48 PM
To: 47F (AAHL, Geelong AAHL); 47F (AAHL, Geelong AAHL)
Cc: 47F (AAHL, Geelong AAHL)
Subject: RE: COVID-19 multilateral collaboration - technical POCs [SEC=UNCLASSIFIED]

Categories: UNCLASSIFIED

UNCLASSIFIED

Thanks 47F. What about things that you may get in large containers in a hardware shop like Methylated Spirits etc? Vinegar as suggested by 47F is quite cheap and should be available on shelves. Unfortunately there may be a strong smell associated with the use of such products.

Any advice based on some science (or even gut-feeling at this time) would be great.

Best wishes,
Greg.

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From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Wednesday, 18 March 2020 12:43 PM
To: Coia, Greg <Greg.Coia@dst.defence.gov.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: RE: COVID-19 multilateral collaboration - technical POCs [SEC=UNCLASSIFIED]

Hi All,

Crude household 'bleach' type products and the, as yet un-depleted in my supermarket, toilet disinfectant products could be quite well diluted I imagine. Maybe not so good to leave on but trying times are trying times.

I also wondered about other sources of 'soap' such as dishwashing products (often significant hydroxide content in the dishwasher stuff) and laundry detergents all of which come in bulk or commercial packaging from suppliers who are not in the direct sight of the panic buying public and might well remain available if we don't give the game away. Similar issues with corrosive or caustic residues if not washed off though I imagine.

Any views on DIY type solvents? I have a large bottle of white spirit for instance which might be worth investigating. Suspend the HS&E implications of widespread use of course.

Regards
47F

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Sent: Wednesday, 18 March 2020 12:01 PM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Subject: RE: COVID-19 multilateral collaboration - technical POCs [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi 47F,

Anything like that would be extremely useful. s 47F asked me a question on what she could use because there is no way of getting hold of surface sprays and hand sanitisers. I think the first responder community would be very interested in knowing whether household products could be used as a surface disinfectant.

Best wishes,
Greg.

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From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Sent: Wednesday, 18 March 2020 11:38 AM

To: Coia, Greg <Greg.Coia@dst.defence.gov.au>

Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Subject: RE: COVID-19 multilateral collaboration - technical POCs [SEC=UNCLASSIFIED]

Hi Greg,

No worries.....you've given me an idea though, you mentioned how no-one can buy hand sanitiser and testing soap would be useful. I'm thinking of maybe testing some other household chemicals while we wait for the humidity chambers?

We were thinking some simple things that people would already have in their cupboards, vinegar, lemon juice (highly effective against FMD), tea tree oil/eucalyptus oil. Things that people could use as a surface disinfectant that they may already have at home rather than trying to buy anything?

Your thoughts/ideas?

47F

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>

Sent: Wednesday, March 18, 2020 9:45 AM

To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Subject: RE: COVID-19 multilateral collaboration - technical POCs [SEC=UNCLASSIFIED]

UNCLASSIFIED

Thanks for your contribution on the phone call this morning 47F.

Best wishes,
Greg.

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From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Tuesday, 17 March 2020 2:36 PM
To: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: RE: COVID-19 multilateral collaboration - technical POCs [SEC=UNCLASSIFIED]

Hi Greg,
Just a quick one – I've asked 47F to call in for this one given that there's a need for technical input. I'm likely to raincheck this one, just because there's a bit of a flurry of early morning/late night meetings this week.
Cheers, 47F

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Sent: Tuesday, 17 March 2020 1:15 PM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: RE: COVID-19 multilateral collaboration - technical POCs [SEC=UNCLASSIFIED]

UNCLASSIFIED

47F are you able to be on the line tomorrow morning?
Not sure what we will say but happy for a quick chat if you have time this arvo.
Greg.

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Sandeman, Ruth

From: Coia, Greg
Sent: Thursday, 19 March 2020 5:54 PM
To: 47F (AAHL, Geelong AAHL); Gubala, Ania DR; 47F (AAHL, Geelong AAHL)
Subject: Re: update on survivability study [SEC=UNCLASSIFIED]

Hi 47F,

Don't put too much effort into this. I think in the end it will be very very high level. A single dot point will do.

Best wishes,
Greg.

From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Thursday, 19 March 2020 4:52:15 PM
To: Gubala, Ania DR; 47F (AAHL, Geelong AAHL)
Cc: Coia, Greg
Subject: RE: update on survivability study [SEC=UNCLASSIFIED]

Hi Ania,
Some results due tomorrow so will update tomorrow afternoon (otherwise it's a pretty short bullet point list!!)
47F

From: Gubala, Ania DR <Ania.Gubala@dst.defence.gov.au>
Sent: Thursday, March 19, 2020 12:53 PM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Cc: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Subject: update on survivability study [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi 47F

We have been asked by the Chief Defence Scientist to provide her with regular updates on the progress of our survivability study 22 that we are trying to set up with you.

I think I'm up to date 22, but could you please provide me with a few bullet points on how the survivability study is going?

If you don't mind I might sporadically contact you for further updates.

Many thanks in advance!

Ania



Australian Government

Department of Defence
Science and Technology

Dr Ania Gubala

Team Lead Biodetection

Land Division, Chemical & Biological Defence Branch

Defence Science & Technology Group

506 Lorimer St, Fishermans Bend VIC 3207 Australia

T: + 61 3 9626 8236

E: ania.gubala@dsto.defence.gov.au

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Sandeman, Ruth

From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Monday, 23 March 2020 3:29 PM
To: Gubala, Ania DR; 47F (AAHL, Geelong AAHL)
Cc: Coia, Greg
Subject: RE: update on survivability study [SEC=UNCLASSIFIED]

Hi Ania,

- Virus stock of BetaCoV/Australia/SA01/2020 generated, purified & titrated (4.2×10^7 /mL)
- 2 x climate chambers arrived Friday and have been electrically tagged/tested. I'll need to find a dolly from Bunnings or something to mount them on (they didn't have them in stock - ~8 weeks away). They will be passed into the secure area this week (earliest start to survivability will be next Monday)
- Following some conversations with Greg/47F, on Friday we trialed Tea Tree oil as a possible disinfectant (1:50 and 1:25- dilution of 1ml/ml Thursday Plantation brand), the 1:50 appears to reduce titre by approx. 0.8 log (results similar for 1min and 5min contact time), results for 1:250 were variable and require repeating.
- Tomorrow we will test formalin fixation on cell monolayers, and disinfection ability of vinegar.
- Next week – should be able to test methylated spitirs/Ethanol/bleach(?)

47F

From: Gubala, Ania DR <Ania.Gubala@dst.defence.gov.au>
Sent: Thursday, March 19, 2020 12:53 PM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Cc: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Subject: update on survivability study [SEC=UNCLASSIFIED]

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Many thanks in advance!

Ania



Australian Government

Department of Defence
Science and Technology

Dr Ania Gubala

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Land Division, Chemical & Biological Defence Branch

Defence Science & Technology Group

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Sandeman, Ruth

From: [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>
Sent: Tuesday, 31 March 2020 10:21 PM
To: Coia, Greg
Subject: Re: Current COVID work with CSIRO [SEC=UNCLASSIFIED]

Thanks, will do.

I'll come up with a similar list for CSIRO/AAHL also. Won't look at your list when I write it!

Sent from my iPhone

On 31 Mar 2020, at 10:13 pm, Coia, Greg <Greg.Coia@dst.defence.gov.au> wrote:

UNCLASSIFIED

Just sent this.

Please keep this to yourself.

Greg.

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From: Coia, Greg
Sent: Tuesday, 31 March 2020 10:12 PM
To: Monro, Tanya PROF
Cc: Shoubridge, Peter; Bowett, Julia DR
Subject: Current COVID work with CSIRO [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Tanya,

Peter asked me to summarize the activities we have with CSIRO. You may have seen these activities before but I have highlighted the CSIRO collaboration below.

22



Project Title: Survivability and inactivation of COVID-19

- I have proposed a project to generate information pertaining to the stability and survivability of COVID-19 under various controlled conditions, and to assess the efficacy of prospective virus decontamination strategies.
- The planned work constitutes a coordinated international effort involving CSIRO AAHL and DST Group in Australia, ³³ [REDACTED] in the UK, and the ³³ [REDACTED] in the USA.
- We have extended the collaboration to now include Canada and New Zealand and this has become a 5 eyes collaboration under the National Security Program led by Richard Davis.
- The collaboration will importantly facilitate the sharing of information to enable the focusing of individual programs on addressing specific knowledge gaps, reduction of unnecessary duplication of effort and corroboration of results.
- As this project develops, we may include DST staff involvement in survivability studies should they be required by CSIRO
- Also involvement of DST staff from the decontamination capability (which is mainly chemistry focussed) could add value to this.

22



I hope this helps and happy to discuss any aspect.

Best wishes,
Greg.

<image001.png>

Dr Greg Coia

Research Leader, Chemical and Biological Defence,
Land Division, Defence Science and Technology Group
Building 94, 506 Lorimer Street
Fishermans Bend VIC 3207
P: +61 3 9626 8467 ^{47F} [REDACTED]
E: greg.coia@dst.defence.gov.au

Sandeman, Ruth

From: [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>
Sent: Tuesday, 14 April 2020 9:42 AM
To: Coia, Greg; [REDACTED] (AAHL, Geelong AAHL)
Cc: [REDACTED] (AAHL, Geelong AAHL); [REDACTED] (AAHL, Geelong AAHL)
Subject: RE: Query Effectiveness of QACs against novel coronavirus [SEC=UNCLASSIFIED]

Happy for you to mention this tomorrow, there isn't much from the AAHL side to update at the moment as the easter long weekend (and CSIRO declared today a public holiday for staff as well), has meant we haven't checked on results since Thursday.

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Sent: Tuesday, April 14, 2020 9:36 AM
To: [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>; [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>
Cc: [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>; [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>
Subject: RE: Query Effectiveness of QACs against novel coronavirus [SEC=UNCLASSIFIED]

UNCLASSIFIED

Excellent, thanks [REDACTED].

I will pass this on to our Maritime folk and get back to you soon.

Are you ok for the 6am meeting tomorrow morning?

(Maybe we can include this as well. If it is early days, I am happy to let it go for a week.)

Best wishes,
Greg.

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From: [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>
Sent: Tuesday, 14 April 2020 9:33 AM
To: Coia, Greg <Greg.Coia@dst.defence.gov.au>; [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>
Cc: [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>; [REDACTED] (AAHL, Geelong AAHL) <[REDACTED]@csiro.au>
Subject: RE: Query Effectiveness of QACs against novel coronavirus [SEC=UNCLASSIFIED]

Hi Greg,

Happy to help where we can, we were talking about trialling some sort of painted surface, so your suggesting comes at a good time (given Canada, US and UK seem to have most other surfaces covered).

As for the permagard testing, all we need for that is some untreated and treated surface & that's a pretty easy comparison to do.

If you could arrange some samples of some untreated surfaces, preferably approx. 1cm² then we can add that into the survivability studies, and then we have some baseline data to compare the permagard treated surface against (again, if you could provide that in roughly 1cm² flat coupons that would be much appreciated).
Alternatively, if you could provide us with a few mL of the permagard, then we could coat our stainless steel coupons and compare with uncoated coupons? (or both)

Let me know how you want to move forward with this one, but we are happy to assist

Regards

47F

47F MSc. BSc. (Hons)

47F

Biorisk Management Group

Australian Animal Health Laboratory CSIRO

5 Portarlington Road, Geelong Vic, 3220

Ph 47F

Fax +61 3 52275555

Email 47F @csiro.au



From: Coia, Greg <Greg.Coia@dst.defence.gov.au>

Sent: Friday, April 10, 2020 2:47 PM

To: 47F (AAHL, Geelong AAHL) <47F @csiro.au>; 47F (AAHL, Geelong AAHL) <47F @csiro.au>

Subject: FW: Query Effectiveness of QACs against novel coronavirus [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi 47F,

We are getting a number of Requests For Information (RFIs) from a number of different areas and this is one. In a nutshell, some of our people from Maritime Division are interested in whether this substance (Permaguard A333) is useful as a coating 33
3 it would be good to make sure it works. If you are interested, the idea is for our people to coat some surfaces and then pass them on to you so that you can determine whether virus survives on them. Is this something that you would be happy to do? We can slot it in under the current virus survivability. Please let me know if you are willing to take this on.

I still need to work out what they are planning to coat? 33
33 the results could be useful for other surfaces, say hospital surfaces etc.

Best wishes,
Greg.

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From: Danek, Stefan
Sent: Thursday, 9 April 2020 5:34 PM
To: Coia, Greg
Cc: Johnston, Priscilla; de Yong, Leo
Subject: Query Effectiveness of QACs against novel coronavirus [SEC=UNCLASSIFIED]

UNCLASSIFIED

Greg,
As discussed, **33** such as Permaguard A333, an aqueous solution containing quaternary ammonium chlorides:

INGREDIENT	CAS NUMBER	PROPORTION
Octadecylaminodimethyltrimethoxysilylpropylammoniumchloride	27668-52-6	<1%
Benzalkonium Chloride	68424-85-1	0.1%
Water	7732-18-5	>98%

The question is whether either octadecylaminodimethyltrimethoxysilylpropylammonium chloride or benzalkonium chloride has been unequivocally demonstrated to be effective against novel coronavirus. Could you please run this by your contacts. As discussed, I would be keen to demonstrate that a painted surface treated with this agent is effective in killing nCV, and then determine how long the surface remains active under various conditions.

[The attached paper by Dellano *et al* discusses the effectiveness of common household disinfectants including a quaternary ammonium salt, albeit not the one in Permaguard A333, on MHV as a surrogate for SARS coronavirus].

Kind regards
Stefan



Mr Stefan Danek
GL Specialised Coatings Technology Group,
Maritime Division
Defence Science & Technology Group
94-2-M2.08, 506 Lorimer St, Fishermans Bend VIC 3207 Australia
T: 03 9626 8438 **47F**
E: stefan.danek@dsto.defence.gov.au

"From the Laboratory to the Battlefield"

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Sandeman, Ruth

From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Wednesday, 15 April 2020 9:17 AM
To: 47F (AAHL, Geelong AAHL); Coia, Greg
Cc: 47F (AAHL, Geelong AAHL)
Subject: RE: Surface survivability [SEC=UNCLASSIFIED]
Attachments: RE: Banknote material for coronavirus testing [SEC=UNCLASSIFIED]

Hi 47F,

Just a quick for info. I got the following reply yesterday from the reserve bank regarding how best to tackle obtaining or using bank note material for destructive testing.

47F

From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Wednesday, 15 April 2020 8:49 AM
To: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: RE: Surface survivability [SEC=UNCLASSIFIED]

Hi Greg,

We thought of that last week, 47F was going to see who we could contact, but that was about 4pm Thursday so it wouldn't have progressed much further than that.
Have you got any contacts that could get a hold of the polymer, and maybe avoid some complications when we say we've destroyed Australian currency!

47F

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Sent: Wednesday, April 15, 2020 6:57 AM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: Surface survivability [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi 47F,

Maybe we should add a little piece of one of our polymer banknotes into the mix?

Best wishes,
Greg.



Dr Greg Coia

Research Leader, Chemical and Biological Defence,
Land Division, Defence Science and Technology Group
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P: +61 3 9626 8467 47F
E: greg.coia@dst.defence.gov.au

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Sandeman, Ruth

From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Wednesday, 15 April 2020 10:59 AM
To: 47F (Manufacturing, Clayton); Coia, Greg; 47F (Executive, Lindfield)
Cc: 47F (AAHL, Geelong AAHL); 47F (AAHL, Geelong AAHL)
Subject: RE: Surface survivability [SEC=UNCLASSIFIED]

Hi 47F,

May thanks for the prompt response. Greg has been communicating with 47F in my team here at AAHL ACDP to get some SARS-CoV-2 virus stability studies underway. This is part of a wider international network interaction with various groups around the world testing materials they have access to and find interesting.

Independently over the weekend it turns out that we have both been considering bank note material as a substrate of interest but there are obviously legal considerations over either acquiring polymer or destroying legal tender. I did consider digging around within CSIRO and called enquiries last week. What I learned didn't fill me with confidence that we would have access to the current generation polymers. Obviously there is a considerable amount of the older generation notes still in circulation so that would not be a total waste of time if it is what we have.

If we have access within CSIRO to polymer which would be representative of banknotes then ideally some 1cm³ 'coupons' would be ideal. Or of course material which we can cut down. I'll defer to 47F for numbers as it would depend on the number of variables we chose for this material. These are likely 4 each of temperature and humidity with enough time point samples to catch the decay as it occurs. I have a couple of hundred coupons in mind.

Subsequently to my chat with enquiries I've been in touch with the Reserve Bank and discovered that we can seek permission to destroy bank notes. They will even reimburse the face value, requesting we use low denomination notes, but only if we can return the destroyed parts in full. I don't think this will be possible but we possibly only need two or three. I'll put that \$15 in myself if it saves a lot of bother. It's possibly cheaper than shipping samples to Geelong.

Discussions now are about whether to use circulated or uncirculated notes. It is not possible to control for what the used notes might have been exposed and the argument that they are more representative of what is out there probably falls over due to this uncertainty. 47F and I agreed we would try to source some uncirculated notes locally if it was not possible to get polymer samples. Reserve bank advice unused notes can be requested from a bank branch. I'm yet to find out if they come in minimum bundles.

Kind regards

47F

From: 47F (Manufacturing, Clayton) <47F@csiro.au>
Sent: Wednesday, 15 April 2020 10:27 AM
To: Coia, Greg <Greg.Coia@dst.defence.gov.au>; 47F (Executive, Lindfield) <47F@csiro.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: RE: Surface survivability [SEC=UNCLASSIFIED]

Hi All

What exactly do we need?

Many years ago I undertook a project on bacterial survivability on banknotes (paper and polymer so that lets you know how long ago). We got polymer from various stages of the process but these came direct from the Reserve Bank via Note Printing Australia and we had to return all materials including those we had cut up – we actually had to weigh all the pieces and return. So what exactly do you need? Do you want unused notes?

Cheers

47F

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>

Sent: Wednesday, 15 April 2020 10:22 AM

To: 47F (Manufacturing, Clayton) <47F@csiro.au>; 47F (Executive, Lindfield) <47F@csiro.au>

Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Subject: RE: Surface survivability [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi 47F,

Probably best to go direct to 47F over at Geelong to save time.

(Unless you wish to discuss something else with me)

Best wishes,

Greg.

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From: 47F (Manufacturing, Clayton) <47F@csiro.au>

Sent: Wednesday, 15 April 2020 10:20 AM

To: Coia, Greg <Greg.Coia@dst.defence.gov.au>; 47F (Executive, Lindfield) <47F@csiro.au>

Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Subject: RE: Surface survivability [SEC=UNCLASSIFIED]

Hi Greg

I will give you a call,

Cheers,

47F

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>

Sent: Wednesday, 15 April 2020 9:59 AM

To: 47F (Manufacturing, Clayton) <47F@csiro.au>; 47F (Executive, Lindfield) <47F@csiro.au>

Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Subject: RE: Surface survivability [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi 47F,

We are running some virus surface survivability studies and one of the surfaces that we thought of was our very own polymer bank notes. Is there anyone in Clayton who may have a small sample that we could use?

Best wishes,
Greg.



Dr Greg Coia

Research Leader, Chemical and Biological Defence,
Land Division, Defence Science and Technology Group
Building 94, 506 Lorimer Street
Fishermans Bend VIC 3207
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From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Wednesday, 15 April 2020 8:49 AM
To: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: RE: Surface survivability [SEC=UNCLASSIFIED]

Hi Greg,

We thought of that last week, 47F was going to see who we could contact, but that was about 4pm Thursday so it wouldn't have progressed much further than that.

Have you got any contacts that could get a hold of the polymer, and maybe avoid some complications when we say we've destroyed Australian currency!

47F

From: Coia, Greg <Greg.Coia@dst.defence.gov.au>
Sent: Wednesday, April 15, 2020 6:57 AM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: Surface survivability [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi 47F,

Maybe we should add a little piece of one of our polymer banknotes into the mix?

Best wishes,
Greg.



Dr Greg Coia

Research Leader, Chemical and Biological Defence,
Land Division, Defence Science and Technology Group
Building 94, 506 Lorimer Street
Fishermans Bend VIC 3207
P: +61 3 9626 8467 **47F**
E: greg.coia@dst.defence.gov.au

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Sandeman, Ruth

From: Coia, Greg
Sent: Thursday, 16 April 2020 1:08 PM
To: 47F (AAHL, Geelong AAHL); 47F (AAHL, Geelong AAHL);
47F (AAHL, Geelong AAHL)
Cc: 47F (AAHL, Geelong AAHL)
Subject: RE: Banknote material for coronavirus testing [SEC=UNCLASSIFIED]
Categories: UNCLASSIFIED

UNCLASSIFIED

Excellent 47F .
And good to see people interested in the results of this.

Best wishes,
Greg

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From: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Sent: Thursday, 16 April 2020 1:04 PM
To: Coia, Greg <Greg.Coia@dst.defence.gov.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>;
47F (AAHL, Geelong AAHL) <47F@csiro.au>
Cc: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: FW: Banknote material for coronavirus testing [SEC=UNCLASSIFIED]

Hi All,
A quick update regarding bank note survivability testing.
See below
47F

From: 47F @rba.gov.au>
Sent: Wednesday, April 15, 2020 5:58 PM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Cc: 47F @rba.gov.au>; 47F @rba.gov.au>; RBAInfo
<RBAInfo@rba.gov.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Subject: RE: Banknote material for coronavirus testing [SEC=UNCLASSIFIED]

Hi Andrew,

Thank you for the additional information and the results of the testing of the virus on many different common surfaces under a variety of environmental conditions would be very interesting and of course useful. I am hoping that you would be able to share the results of your research when it is completed, as I am very interested in the information you obtain. In terms of destroying the banknotes after testing, I understand the constraints of incineration at the end of the testing according to the level of biocontainment you are intending to use. In terms of the Crimes Currency Act, approval is still required and I would be pleased to supply this. Let me know the serial numbers and denominations of the banknotes you wish to use in the testing and I can provide you with a letter authorising this.

Kind regards,

47F.

47F

RESERVE BANK OF AUSTRALIA | 1-9 Potter Street, Craigieburn, VIC, 3064

p: 47F | f: +61 3 9930 2654 | m: 47F | w: www.rba.gov.au



From: 47F (AAHL, Geelong AAHL) [<mailto:47F@csiro.au>]

Sent: Wednesday, 15 April 2020 5:43 PM

To: 47F@rba.gov.au

Cc: 47F@rba.gov.au; 47F@rba.gov.au; RBAInfo <RBAInfo@rba.gov.au>; 47F (AAHL, Geelong AAHL) <47F@csiro.au>

Subject: RE: Banknote material for coronavirus testing [SEC=UNCLASSIFIED]

EXTERNAL EMAIL: Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hi 47F,

Many thanks for the reply.

A little more on the experimental design. We are propagating isolates of the virus here at the ACDP in Geelong and have commenced testing some disinfectants using international standard methods. This is currently being done on stainless steel carriers but we may try other surfaces, like banknote, later if we have time and resources. The banknotes feature in a second thread of testing where we have some temperature and humidity controlled incubators and along with some international colleagues and the DSTG in Australia, we will be jointly testing the stability of the virus on various surfaces at various environmental conditions. This involves placing known amounts of the virus on the surfaces and drying down before leaving them in the controlled environment. Multiple 'coupons' of the material are set-up to allow for samples to be removed and tested to see how much live virus we are able to recover at different time points across the expected survivability period. This might be days at some more favourable conditions or only hours where the virus is not so happy.

I'm not sure returning the used coupons will be an option since we are conducting the work inside the highest level of biocontainment laboratory and all of the waste is passed out through a steam steriliser and then incinerated. I don't believe we need to go through the process of recovering face value for what should amount to not much more than \$20 or \$30 in \$5 notes. But thank you for pointing this out.

Once we confirm details with DSTG and I know how many notes we will be destroying I will let you know. We can then keep everything in order.

Kind regards

47F

From: 47F <[REDACTED]@rba.gov.au>
Sent: Tuesday, 14 April 2020 5:52 PM
To: 47F (AAHL, Geelong AAHL) <47F@csiro.au>
Cc: 47F <[REDACTED]@rba.gov.au>; 47F <[REDACTED]@rba.gov.au>; RBAInfo <RBAInfo@rba.gov.au>
Subject: RE: Banknote material for coronavirus testing [SEC=UNCLASSIFIED]

Hi 47F,

Thank you for your message regarding the possibility of obtaining banknote material in order to test the survival characteristics of the coronavirus on different surfaces. It would be great if you were able to share more about your experimental design in this regard especially around the surfaces you plan to test and how you plan to conduct the study; and given the media it is natural to include banknotes. In terms of supplying material for your investigation it is easy for us if you were to use whole banknotes for the study, as opposed to offcuts which are harder to obtain from a security perspective. Under the Crimes Currency Act I am able to authorise you to destroy the banknotes for this purpose, and I can provide you with the letter to this effect, along with the mechanism for making a claim to recover the face value of the banknotes used in the study. In this regard, if you can source the banknotes, preferably a low denomination, that would be the best route to sourcing material. You could obtain new, uncirculated banknotes from a bank branch and once you send me the serial numbers and denominations I can provide you with a letter to damage these for your intended purpose. This letter will also indicate the process by which you can claim back the face value of the banknotes. However, before you submit the claim you will need to disinfect/decontaminate the material and ideally the full banknote will need to be present.

I hope that this assists with your request, but please feel free to reach out if you have other questions or I can be of further assistance.

Kind regards,

47F

47F
RESERVE BANK OF AUSTRALIA | 1-9 Potter Street, Craigieburn, VIC, 3064
p: 47F | f: +61 3 9930 2654 | m: 47F | w: www.rba.gov.au



From: 47F (AAHL, Geelong AAHL) [mailto:47F@csiro.au]
Sent: Thursday, 9 April 2020 4:48 PM

To: RBAInfo <RBAInfo@rba.gov.au>

Subject: Banknote material for coronavirus testing

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Dear Reserve Bank Info,

My team at the CSIRO Australian Centre for Disease Preparedness in Geelong are conducting studies on the SARS-CoV-2 virus such as how long it can survive on different surfaces. A surface which keeps coming up in planning discussions is banknote material. There is also an interest in decontamination studies. Once we have some generic data on disinfectants we might look into their application to specific materials. We were all personally interested in whether it is possible to disinfect banknotes as well.

We are hoping we might get some guidance from yourselves on two options for making this research possible. Firstly do you know if it might possible to acquire small pieces of the polymer material from which bank notes are manufactured? Offcuts from the printing process etc. If so could you please give us a lead? We are keen for this not to sound nefarious, obviously. For context two 5 dollar notes would probably provide us with enough material to conduct the study using pieces approximately 10mm x 10mm or less. This avoids the issue of destroying legal tender.

Which brings us to the second option. Is it feasible to seek permission to destroy a couple of bank notes in pursuit of this research? Please let us know if this would potentially be acceptable and if there is an official mechanism for this.

Any advice would be much appreciated.

Kind regards

47F

47F

Australian Animal Health Laboratory

CSIRO

E 47F @csiro.au T 47F

5 Portarlington Road, East Geelong, VIC 3219, Australia

www.csiro.au | www.csiro.au/places/aahl

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This footnote also confirms that this message has been checked for computer viruses.

Project title: Survivability and inactivation of COVID-19

Alignment to National Security Program: This work contributes to the interests of the PREPAREDNESS, PROTECTION, PREVENTION AND INCIDENT RESPONSE (P3IR) Program in the National Security S&T Centre.

DST point of contact: Greg Coia (Research Leader, Chemical and Biological Defence)

Aim and scope of the proposed project

The aim of this activity is to generate information pertaining to the stability and survivability of the coronavirus SARS-CoV-2, responsible for the current outbreak, under various controlled conditions, and to assess the efficacy of prospective virus decontamination strategies. Initially, Australia is looking to study the survivability of the virus on stainless steel surfaces under varying humidity and temperature conditions. The planned work includes assessment of the efficacy of disinfectants such as ethanol, Virkon, hyperchlorite and F10SC, and commonly used substances in the laboratory such as nucleic acid/protein extraction buffers, tissue fixation methods and heat treatment on the inactivation of the virus.

Results

The following are updates following weekly discussions from the commencement of the project. As you will note, these results are very preliminary and experiments will be ongoing.

March 18th 2020

- Waiting for equipment to arrive next week
- Starting with formaldehyde studies
- First isolate wasn't very good, but received a second one that is better
- Until we get humidity chambers, hamstrung on survivability studies
- All equipment was purchased via partnership with DSTG

March 25th 2020

- Virus stocks generated - 2 of 4 climate chambers have arrived, moving them into BSL4 lab shortly
- Quick studies underway on activation of strain
- Buying hand sanitizers and soap becoming difficult in AUS, people stockpiling,
- Looking at other household products that could work instead—tea tree oil, vinegar this week, looking at bleach next week
- Will have results next week to share

April 1st 2020

- Initiated bleach and vinegar tests on Monday with results expected end of week – looking at other household products that may be effective
- Humidity testing to start next week
- Question for **47**: Are you looking at humidity on aerosols or coupons
 - Only coupons, don't have equipment to look at aerosols
 - Range of surfaces being assessed

April 8th 2020

- Start with titration of bleach
- Vinegar – 1-1.5 log reduction at 1 and 5 minutes
- Bleach – 4.6×10^5 reduction (no virus left after 1 minute)
- Looking at dry heat
 - Looked at 60°C and 1 hour (15% RH) - some virus left on filter
 - 30°C and 40°C on 80% humidity – results next week
 - Masks in oven for 1 hour, still some virus left on filter tested

April 15th 2020

- Survivability for 30°C at 80% humidity
 - 1 log drop
 - 40°C after 24 hours – 1 to 2 positive left
 - Now looking at 48-72 hours
- Looking at Trizol and others as a decontaminant
- Decon to continue on different surfaces and materials
 - Example Permaguard ³³ to see if effective as surface coating