

## Revised forms for the submission of the Confidence-Building Measures

### Declaration form on Nothing to Declare or Nothing New to Declare for use in the information exchange

Measure	Nothing to declare	Nothing new to declare	Year of last declaration if nothing new to declare
A, part 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A, part 2 (i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A, part 2 (ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A, part 2 (iii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Please mark the appropriate box(es) for each measure with a tick, and fill in the year of last declaration in the last column where applicable.)

Date: April 6th 2017 \_\_\_\_\_

State Party to the Convention: Finland \_\_\_\_\_

Date of ratification/accession to the Convention: February 4, 1974 \_\_\_\_\_

National point of contact: Mikael Långström / MFA \_\_\_\_\_

## Confidence-Building Measure "A"

### Form A, part 1 (i)

No maximum containment laboratory exists in Finland.

### Form A, part 1 (ii)

If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:

Biosafety level 3 <sup>2</sup>	<input checked="" type="checkbox"/> / no
Biosafety level 2 <sup>3</sup> (if applicable)	yes / no

Any additional relevant information as appropriate:

Additional information specific to each laboratory working with biological agents at BSL2/BSL3 level follows from these organisations: Centre for Biothreat Preparedness, National Institute of Health and Welfare (THL), University of Helsinki; *i*) Yersinia Research Laboratory, *ii*) Department of Virology, *iii*) Department of Food and Environmental Sciences, *iv*) *Clostridium botulinum* laboratory, Finnish Food Safety Authority (Evira) and Finnish Defence Research Agency (FDRA).

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<sup>1</sup> Microorganisms pathogenic to humans and/or animals

<sup>2</sup> In accordance with the latest edition of the WHO Laboratory Biosafety Manual and/or the OIE Terrestrial Manual or other equivalent internationally accepted guidelines.

<sup>3</sup> In accordance with the latest edition of the WHO Laboratory Biosafety Manual and/or the OIE Terrestrial Manual or other equivalent internationally accepted guidelines.

## Exchange of Data on Research Centres and Laboratories #1

**1. Name(s) of the Facility**

Centre for Biothreat Preparedness

**2. Responsible public or private organization or company**

Centre for Military Medicine, Finnish Defence Forces under the Ministry of Defence and the National Institute for Health and Welfare (THL) under Ministry of Social Affairs and Health.

**3. Location and postal address**

Tukholmankatu 8 A, FI-00290 Helsinki and Mannerheimintie 166, FI-00300 Helsinki.

**4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**

The Centre is financed jointly by the Finnish Defence Forces and National Institute for Health and Welfare (THL).

**5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m<sup>2</sup>)**

There are no BSL-4 units at the Centre.

**6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**

The Centre for Biothreat Preparedness started its activities in 2005. During 2016, the Centre developed rapid detection assays for selected microbial agents.

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>4</sup> on a State Party's territory:**

Biosafety level 3	yes
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<sup>4</sup> Microorganisms pathogenic to humans and/or animals

## Exchange of Data on Research Centres and Laboratories #2

**1. Name(s) of the Facility**

Finnish Food Safety Authority (Evira)

**2. Responsible public or private organization or company**

Finnish Food Safety Authority under the Ministry of Agriculture and Forestry

**3. Location and postal address**

Mustialankatu 3  
FI-00790 Helsinki

**4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**

Financing from the Ministry of Agriculture and Forestry

**5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m2)**

None

**6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**

Diagnostics, surveillance and reference laboratory activities of animal diseases, zoonotic agents and foodborne pathogens, for example rabies, avian influenza, swine influenza (including pandemic H1N1 in pigs), Newcastle disease, foot and mouth disease, classical swine fever, anthrax, tuberculosis, verotoxic *E. coli*.

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:**

Biosafety level 3	yes
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<sup>1</sup> Microorganisms pathogenic to humans and/or animals

### Exchange of Data on Research Centres and Laboratories #3

**1. Name(s) of the Facility**

Finnish Defence Research Agency (FDRA)

**2. Responsible public or private organization or company**

Finnish Defence Research Agency (FDRA), Finnish Defence Forces under the Ministry of Defence.

**3. Location and postal address**

P.O. Box 5 (Paroistentie 20)  
FI-34111 Lakiala  
Finland

**4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**

Finnish Defence Forces

**5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m2)**

No BSL-4 laboratories.

**6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**

The objective of the research work has been in the development of detection and identification methods for biological warfare agents; microbes and toxins. A deployable CBRN field laboratory participated in international military exercises. The BSL-3 level CBRN field laboratory was operated as BSL-2 and BSL-3 containment facility during 2016.

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:**

Biosafety level 3	yes
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<sup>1</sup> Microorganisms pathogenic to humans and/or animals

## Exchange of Data on Research Centres and Laboratories #4

**1. Name(s) of the Facility**

National Institute for Health and Welfare (THL), bacteriological and virological laboratories.

**2. Responsible public or private organization or company**

National Institute for Health and Welfare (THL) under Ministry of Social Affairs and Health.

**3. Location and postal address**

Mannerheimintie 166, FI-00300 Helsinki

**4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**

Funding from the Ministry of Social Affairs and Health and large variety of external research funding.

**5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m2)**

There are no BSL-4 laboratories or other units at this containment level.

**6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**

Clinical and environmental microbiological research and reference laboratory facilities in Helsinki, and Kuopio. The laboratories located in Turku and Oulu were closed down in 2016. The institute is working mainly with ordinary occurring endemic and epidemic bacteria and viruses with main emphases on vaccine preventable diseases, enteric pathogens, zoonoses, *tuberculosis spp*, polioviruses, avian influenza, coronaviruses, zikavirus, HIV, hepatitis viruses and environmental fungi and bacteria causing human health problems. The Institute manages regional influenza and polio laboratory facilities. The Institute is in charge of biothreat preparedness in public health context. National focal point for IHR started June 2007.

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:**

Biosafety level 3	yes
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**Any additional relevant information as appropriate:**

A BSL-3 level laboratory in Helsinki (120m<sup>2</sup>). The BSL-3 laboratory in Turku was closed down in 2016.

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<sup>1</sup> Microorganisms pathogenic to humans and/or animals

## Exchange of Data on Research Centres and Laboratories #5

**1. Name(s) of the Facility**

*Clostridium botulinum* laboratory

**2. Responsible public or private organization or company**

University of Helsinki

**3. Location and postal address**

Department of Food Hygiene and Environmental Health

Faculty of Veterinary Medicine

Agnes Sjöbergin katu 2

P.O. Box 66

00014 University of Helsinki, Finland

**4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**

The laboratory is financed by the University of Helsinki. External research funding is received from various sources, including European Research Council, European Commission, Academy of Finland, Finnish Ministry of Agriculture and Forestry, Walter Ehrström Foundation, Finnish Foundation for Veterinary Research, and Finnish food industry.

**5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m2)**

No BSL-4 laboratories.

**6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**

Scientific research on the prevalence, epidemiology, genetic heterogeneity, and genetic regulatory mechanisms in *Clostridium botulinum*. Diagnostic services for confirmation of suspected human botulism outbreaks and food safety testing.

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:**

Biosafety level 3	no
Biosafety level 2 (if applicable)	yes

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<sup>1</sup> Microorganisms pathogenic to humans and/or animals

## Exchange of Data on Research Centres and Laboratories #6

- 1. Name(s) of the research centre and/or laboratory**  
Department of Food and Environmental Sciences
- 2. Responsible public or private organization or company**  
University of Helsinki
- 3. Location and postal address**  
Department of Food and Environmental Sciences  
P.O. Box 56 (Viikinkaari 9)  
00014 University of Helsinki
- 4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**  
Funding was received from Academy of Finland for “Mechanisms in the formation of membrane structures involved in virus replication”.
- 5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m2)**  
There are no BSL-4 laboratories.
- 6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**  
The research group carries out alphavirus research at the Department of Food and Environmental Sciences, University of Helsinki. The research focuses on the alphavirus (Semliki Forest virus, Sindbis virus and Chikungunya virus) replication mechanisms and antiviral development. Small molecular-weight inhibitors are searched against Chikungunya virus. The Chikungunya virus research is conducted in the BSL-3 laboratory of the Veterinary Faculty in the Viikki campus.

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:**

Biosafety level 3	yes
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<sup>1</sup> Microorganisms pathogenic to humans and/or animals



**Exchange of Data on Research Centres and Laboratories #7:**

**1. Name(s) of the research centre and/or laboratory**

Department of Virology, Human DNA Viruses: Clinical Impact and Molecular Biology

**2. Responsible public or private organization or company**

University of Helsinki

**3. Location and postal address**

Dept of Virology  
P.O. Box 21  
00014 University of Helsinki

**4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**

The Helsinki University Hospital Research & Education Fund, the Academy of Finland (grant 1257964), the Medical Society of Finland, the Sigrid Jusélius Foundation, the Jane and Aatos Erkko Foundation, and the Finnish-Norwegian Medical Foundation

**5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m2)**

There are no BSL-4 laboratories.

**6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**

Research on heavily fragmented variola virus (VARV) DNA found in an ancient mummy while searching for other viruses (JC virus). Described thoroughly in a report to the WHO (attached).

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:**

Biosafety level 3	yes
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<sup>1</sup> Microorganisms pathogenic to humans and/or animals

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August 2, 2016

**World Health Organization**  
**WHO Advisory Committee on Variola Virus Research**  
**20 Avenue Appia**  
**1211 Geneva 27**  
**Switzerland**  
Telephone: + 41 22 791 21 11  
Facsimile (fax): + 41 22 791 31 11

To whom it may concern,

Regarding the WHO Advisory Committee on Variola Virus (VARV) Research: Report of the Seventeenth Meeting Geneva, Switzerland 12–13 January 2016.

We would like to inform the committee, that we have inadvertently found evidence of heavily fragmented variola virus (VARV) DNA, in an ancient mummy, while searching for other viruses (JC virus), that we have now sequenced and bioinformatically analyzed. The results we would like to publish discuss the ancient fragmented genome in comparison with other previously sequenced and publically available modern genomes and reset the clock on the origin and timing of smallpox. They are strictly dealing with in-silico bioinformatics analysis and the origins of VARV, nothing further.

The purpose of this letter is to inform the committee about our recent findings, as required in the aforementioned WHO Committee's report, and secondly, to ask for permission to publish our results.

First we would like to emphasize that our findings and research are in full agreement with the WHO Committee's report's, titled ANNEX 5 considering distribution, handling and synthesis of VARV DNA. Our research will not cause health hazard to the researchers in the laboratory or on a population level. We base our request on the points listed below (based on the ANNEX 5 of the WHO Committee report):

1. Evidence of VARV DNA was an accidental finding in an archaeovirology project (JC virus), carried out by researchers of the University of Helsinki and at the Ancient DNA Centre, McMaster University while searching for the DNA of other human viruses in samples collected from a human mummy. Thus, we were unable to ask for permission prior to our findings.
2. We are herewith reporting our findings of the ancient VARV DNA to the WHO. We have not previously encountered or analyzed any VARV DNA sequences in either labs and have thus not been in a position to report of such findings.
3. The VARV DNA we have recovered is heavily fragmented (on average <50bp in length) and shows severe DNA damage, as is typical of all ancient pathogen DNA, thus these are not infectious viral particles.

## Exchange of Data on Research Centres and Laboratories #8:

- 1. Name(s) of the research centre and/or laboratory**  
Department of Virology, Viral Zoonoses Group
- 2. Responsible public or private organization or company**  
University of Helsinki
- 3. Location and postal address**  
Dept of Virology  
Medicum, P.O. Box 21  
00014 University of Helsinki
- 4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**  
Major funding from Helsinki University Hospital Funds (EVO), University of Helsinki, Academy of Finland, and Sigrid Jusélius Foundation. EU-IMI ("EbolaMoDRAD" project)
- 5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m2)**  
There are no BSL-4 laboratories.
- 6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**  
The Helsinki University Viral Zoonoses Group (HUVZG) conducts research on virology, cell biology, ecology and epidemiology of zoonotic viruses, especially hantaviruses and certain other rodent-borne and arboviruses occurring in Northern Europe. Typical viruses that we are growing are Puumala virus, tick-borne encephalitis virus, dengue and Zika viruses. The research group operates within the Faculty of Medicine, Department of Virology, and partially the Department of Veterinary Biosciences at the Veterinary Faculty. There is a BSL-3 facility in both faculties. The Viral Zoonoses group is connected to the diagnostic laboratory of viral zoonoses at HUSLAB, Helsinki. The group is led by Olli Vapalahti, other principal investigators are Alexander Plyusnin, and professor Emeritus Antti Vaheri.

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:**

Biosafety level 3	yes
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<sup>1</sup> Microorganisms pathogenic to humans and/or animals

## Exchange of Data on Research Centres and Laboratories #9

**1. Name(s) of the Facility**

Yersinia Research Laboratory

**2. Responsible public or private organization or company**

University of Helsinki

**3. Location and postal address**

Department of Bacteriology and Immunology

Haartman Institute, University of Helsinki

Haartmaninkatu 3

P.O Box 21

FI-00014 University of Helsinki

Helsinki, Finland

Yersinia-research home page: <http://www.helsinki.fi/yersinia/>

**4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**

Special state subsidy (EVO) for health science research in Finland, the Academy of Finland, Centre for Military Medicine.

**5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m<sup>2</sup>)**

No BSL-3 or 4 laboratories.

**6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**

The research is focused on genetics and biosynthesis of lipopolysaccharide (LPS) of *Yersinia pestis*, as well as on the role of LPS in virulence. Molecular evolution studies elucidate the relationships between the species of the genus *Yersinia*. Research work is also conducted on the identification of *Y. pestis* specific bacteriophage receptors.

**If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents<sup>1</sup> on a State Party's territory:**

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<sup>1</sup> Microorganisms pathogenic to humans and/or animals

Biosafety level 3	<b>no</b>
Biosafety level 2 (if applicable)	<b>yes</b>

## **Part 2 Exchange of information on national biological defence research and development programmes**

### **Form A, part 2 (i)**

#### **National biological defence research and development programmes Declaration**

Are there any national programmes to conduct biological defence research and development within the territory of the State Party, under its jurisdiction or control anywhere? Activities of such programmes would include prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxicology, physical protection, decontamination and other related research.

**yes** / no

If the answer is Yes, complete Form A, part 2 (ii) which will provide a description of each programme.

### **Form A, part 2 (ii, iii)**

#### **National biological defence research and development programmes**

The Finnish Strategy to Secure Vital Functions of Society (2003 and 2006), as well as The Security Strategy for Society (2010) have defined vital functions of Finnish society and established targets and development policies that guide each administrative branch of the government in dealing with its strategic tasks. These strategies called for co-operation between each government sector in combating against new threats towards society. According to the Government Reports on Finnish Security and Defence Policy of 2004, 2009 and 2012, terrorism and epidemics caused by infectious diseases were listed as key threats affecting national security. In addition CBRN protection including biotechnology and engineering have been listed critical for the national defence in Securing the Finnish Defence Technological and Industrial Base –resolution (2016).

The Centre for Biothreat Preparedness started operations in Helsinki in May 2005. The Centre combines Finnish scientific and laboratory knowhow on biological defence, as well as on biothreat assessment and preparedness. The Centre has actively sought domestic and international collaboration, especially in the field of rapid detection and identification methodologies of selected biological agents. The Centre is composed of two units: the Biological Defence Sector of the Finnish Defence Forces, and the Department of Infectious Diseases at the National Institute of Health and Welfare (THL). Scientific work is carried out at a biological safety level 3 laboratory at the THL facilities. In addition, the Centre functions within the Biomedicum Helsinki Institute, where work is carried out in close contact with the Research and Development Department of the Centre for Military Medicine.

## **Confidence-Building Measure "B"**

**Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins**

### **Form B**

**Information on outbreaks of infectious diseases and similar occurrences, that seem to deviate from the normal pattern<sup>5</sup>**

No unusual human or animal disease outbreaks were detected in 2016.

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<sup>5</sup> See paragraph 2 of the chapeau to Confidence-Building Measure B.

## Confidence-Building Measure "C"

### Encouragement of publication of results and promotion of use of knowledge

Alakurtti, S., R. Keto-Timonen, S. Virtanen, P. Ortiz Martínez, R. Laukkanen-Ninios & H. Korkeala: Large diversity of porcine *Yersinia enterocolitica* 4/O:3 in eight European countries assessed by multiple-locus variable-number tandem-repeat analysis. *Foodborne Pathog. Dis.* 2016. *Foodborne Pathog Dis.* 2016, 13, 289-295. doi: 10.1089/fpd.2015.2095. Epub 2016 Mar 18.

Adouchief S, Smura T, Vapalahti O, Hepojoki J. Mapping of human B-cell epitopes of Sindbis virus. *J Gen Virol.* 2016 Sep;97(9):2243-54. doi: 10.1099/jgv.0.000531.

Barakat AM, Smura T, Kuivanen S, Huhtamo E, Kurkela S, Putkuri N, Hasony HJ, Al-Hello H, Vapalahti O. The Presence and Seroprevalence of Arthropod-Borne Viruses in Nasiriyah Governorate, Southern Iraq: A Cross-Sectional Study. *Am J Trop Med Hyg.* 2016 Apr;94(4):794-9. doi: 10.4269/ajtmh.15-0622.

Chauhan, N., Wrobel, A., Skurnik, M and Leo, J.C. 2016. *Yersinia* adhesins: an arsenal for infection. *Proteomics Clinical Applications* 10: 949-963. doi: 10.1002/prca.201600012

Das, P. K., Puusepp, L., Varghese, F. S., Utt, A., Ahola, T., Kananovich, D. G., Lopp, M., Merits, A. and Karelson, M. (2016). Design and validation of novel chikungunya virus protease inhibitors. *Antimicrob. Agents Chemother.* 60, 7382-7395.

Derman, Y., K. Selby, S. Miethe, A. Frenzel Y.Liu, C. Escargueil, A. Avril; T. Pelat; R. Urbain, A. Fontaynea, P. Thullier, T. Sesardic, M. Lindström, M.Hust & H. Korkeala: Neutralization of Botulinum Neurotoxin Type E by a Humanized Antibody. *Toxins (Basel)* 2016. 141830; doi: 10.3390/toxins8090257

Derman, Y., E. Dahlsten & H. Korkeala: Role of Two-component Systems in Cold Tolerance of *Clostridium botulinum*. In: de Bruijn F. J. (Ed) *Stress and Environmental Regulation of Gene Expression and Adaptation in Bacteria*. Vol 2. Wiley-Blackwell, 2016, 845-853. doi:10.1002/9781119004813.ch82

Driggers RW, Ho CY, Korhonen EM, Kuivanen S, Jääskeläinen AJ, Smura T, Rosenberg A, Hill DA, DeBiasi RL, Vezina G, Timofeev J, Rodriguez FJ, Levanov L, Razak J, Iyengar P, Hennenfent A, Kennedy R, Lanciotti R, du Plessis A, Vapalahti O. Zika Virus Infection with Prolonged Maternal Viremia and Fetal Brain Abnormalities. *N Engl J Med.* 2016 Jun 2;374(22):2142-51. doi: 10.1056/NEJMoa1601824.

Duggan AT, Perdomo MF, Piombino-Mascalì D, Marciniak S, Poinar D, Emery MV, Buchmann JP, Duchêne S, Jankauskas R, Humphreys M, Golding GB, Southon J, Devault A, Rouillard JM, Sahl JW, Dutour O, Hedman K, Sajantila A, Smith GL, Holmes EC, Poinar HN. 17th Century Variola Virus Reveals the Recent History of Smallpox. *Curr Biol.* 2016 Dec 19;26(24):3407-3412. doi: 10.1016/j.cub.2016.10.061. Epub 2016 Dec 8.

Gabriel E, Ramani A, Karow U, Gottardo M, Natarajan K, Gooi LM, Goranci-Buzhala G, Krut O, Peters F, Nikolic M, Kuivanen S, Korhonen E, Smura T, Vapalahti O, Papantonis A,



Schmidt-Chanasit J, Riparbelli M, Callaini G, Krönke M, Utermöhlen O, Gopalakrishnan J. Recent Zika Virus Isolates Induce Premature Differentiation of Neural Progenitors in Human Brain Organoids. *Cell Stem Cell*. 2017 Jan 23. pii: S1934-5909(16)30461-1. doi: 10.1016/j.stem.2016.12.005.

Heitmann A, Jansen S, Lühken R, Leggewie M, Badusche M, Pluskota B, Becker N, Vapalahti O, Schmidt-Chanasit J, Tannich E. Experimental transmission of Zika virus by mosquitoes from central Europe. *Euro Surveill*. 2017 Jan 12;22(2). pii: 30437. doi: 10.2807/1560-7917.ES.2017.22.2.30437.

Jääskeläinen A, Tonteri E, Pieninkeroinen I, Sironen T, Voutilainen L, Kuusi M, Vaheeri A, Vapalahti O. Siberian subtype tick-borne encephalitis virus in *Ixodes ricinus* in a newly emerged focus, Finland. *Ticks Tick Borne Dis*. 2016 Feb;7(1):216-23. doi: 10.1016/j.ttbdis.2015.10.013.

Kenyon JJ, Duda KA, De Felice A, Cunneen MM, Molinaro A, Laitinen J, Skurnik M, Holst O, Reeves PR, De Castro C. Serotype O:8 isolates in the *Yersinia pseudotuberculosis* complex have different O-antigen gene clusters and produce various forms of rough LPS. *Innate Immun*. 2016 Apr;22(3):205-17. doi: 10.1177/1753425916631403.

Keto-Timonen, R., N. Hietala, E. Palonen, A. Hakakorpi, M. Lindström & H. Korkeala: Cold shock proteins: A minireview with special emphasis on Csp-family of enteropathogenic *Yersinia*. *Front Microbiol*. 2016 Jul 22;7:1151. doi: 10.3389/fmicb.2016.01151. eCollection 2016.

Korhonen V, Smit PW, Haanperä M, Casali N, Ruutu P, Vasankari T, Soini H. Whole genome analysis of *Mycobacterium tuberculosis* isolates from recurrent episodes of tuberculosis, Finland, 1995-2013. *Clin Microbiol Infect* 22:549-554, 2016.

Koskela KA, Kalin-Mänttari L, Hemmilä H, Smura T, Kinnunen PM, Niemimaa J, Henttonen H & Nikkari S. Metagenomic evaluation of bacteria from voles. *Vector-Borne and Zoonotic Diseases*, julkaistu verkossa 17.11.2016. doi: <http://dx.doi.org/10.1089/vbz.2016.1969>.

Kramarenko, T., M. Roasto, R. Keto-Timonen, M. Mäesaar, K. Meremäe, M. Kuningas, A. Hörman & H. Korkeala: *Listeria monocytogenes* in ready-to-eat vacuum and modified atmosphere packaged meat and fish products of Estonian origin at retail level. *Food Control* 2016, 67, 48-52.

Korhonen EM, Huhtamo E, Smura T, Kallio-Kokko H, Raassina M, Vapalahti O. Zika virus infection in a traveller returning from the Maldives, June 2015. *Euro Surveill*. 2016;21(2). doi: 10.2807/1560-7917.ES.2016.21.2.30107.

Kuivanen S, Bespalov MM, Nandania J, Ianevski A, Velagapudi V, De Brabander JK, Kainov DE, Vapalahti O. Obatoclox, saliphenylhalamide and gemcitabine inhibit Zika virus infection in vitro and differentially affect cellular signaling, transcription and metabolism. *Antiviral Res*. 2017 Mar;139:117-128. doi: 10.1016/j.antiviral.2016.12.022.

Leon-Velarde CG, Happonen L, Pajunen M, Leskinen K, Kropinski AM, Mattinen L, Rajtor M, Zur J, Smith D, Chen S, Nawaz A, Johnson RP, Odumeru JA, Griffiths MW, Skurnik M. *Yersinia enterocolitica*-Specific Infection by Bacteriophages TG1 and  $\phi$ R1-RT Is Dependent on

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## Confidence-Building Measure "E"

### Form E

#### Declaration of legislation, regulations and other measures

Relating to	Legislation	Regulations	Other measures <sup>6</sup>	Amended since last year
(a) Development, production, stockpiling, acquisition or retention of microbial or other biological agents, or toxins, weapons, equipment and means of delivery specified in Article I	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	Yes/ <input type="checkbox"/> No
(b) Exports of micro-organisms <sup>7</sup> and toxins	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	Yes/ <input type="checkbox"/> No
(c) Imports of micro-organisms <sup>11</sup> and toxins	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	Yes/ <input type="checkbox"/> No
(d) Biosafety <sup>8</sup> and biosecurity <sup>9</sup>	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	<input type="checkbox"/> Yes/ <input type="checkbox"/> No	Yes/ <input type="checkbox"/> No	Yes/ <input type="checkbox"/> No

#### Additional information to form E

Finland's legislation on biological weapons is based on the Biological Weapons Act 257/1975 and Decree 258/1975. Corresponding penal provisions were included in the Penal Code, chapter 11, section 7 b (Breach of the prohibition of biological weapons), with amendment 17/2003. Penal Code (39/1889) chapter 11, section 1 (War Crime), chapter 5, section 3 (Complicity in an offence) and section 6 (Abetting), chapter 34, sections 4 (Health endangerment) and 5 (Aggravated health endangerment), and chapter 34 a (Terrorist offences) are also applicable.

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<sup>6</sup> Including guidelines.

<sup>7</sup> Micro-organisms pathogenic to man, animals and plants in accordance with the Convention.

<sup>8</sup> In accordance with the latest version of the WHO Laboratory Biosafety Manual or equivalent national or international guidance.

<sup>9</sup> In accordance with the latest version of the WHO Laboratory Biosecurity Guidance or equivalent national or international guidance.

Exports of micro-organisms and toxins are regulated by the Act on the Control of Export of Dual-Use Goods (562/1996, as amended by Acts 891/2000, 884/2001 and 581/2003), Government Decree on the Control of Export of Dual-Use Goods (924/2000 as amended by Decree 924/2000) and EC Council Regulation 1334/2000. Corresponding penal provisions were incorporated in the Penal Code (39/1889), chapter 46, sections 1-3 by Acts 769/1990, 1522/1994 and 706/1997. Since 2003, the authority responsible for export controls of micro-organisms and toxins is the Ministry for Foreign Affairs (Export Control Unit).

Exports of biological toxic agents "adapted for use in war" and related equipment, components and materials as listed in the EU Common Military List are regulated by the Act on the Export of Defence Materiel (282/2012). The authority responsible for export controls of the above mentioned biological toxic agents and related equipment, component and materials is the Ministry of Defence.

Imports of micro-organisms and toxins are regulated by the Biological Weapons Act 257/1975 and Decree 258/1975. Transports of micro-organisms and toxins are also regulated by the EC Council Directives 94/55/EEC and 96/49/EEC, the Communicable Diseases Act 1227/2016 (as amended), section 33; Communicable Diseases Decree 146/2017 (as amended); Act on the Transport of Dangerous Goods (719/1994 as amended) and related decrees, Act on Protecting Plant Health (702/2003), section 7, and related decrees, Act on Animal Diseases (55/1980 as amended) and related decrees, Act on Veterinary Border Control (1192/1996 as amended) and related decrees. The corresponding penal provisions are included in the Penal Code (39/1889 as amended), chapter 44, section 2 (Health protection violation), chapter 44, section 13 (Transport of dangerous substances offence) and chapter 46, section 4 (Smuggling).

Biosafety is regulated by the Occupational Safety and Health Act (738/2002), as amended by the Government Decision for Protecting Employees from Work-related Threat Caused by Biological Agents (1155/1993), and Decision of the Ministry of Social Affairs and Health on the Classification of Biological Agents (921/2010). Furthermore, regulations concerning biosafety are included in the Communicable Diseases Act (1227/2016) and Decree (146/2017), as well as Gene Technology Act (377/1995) and Government Decree on Gene Technology (928/2004). These biosafety regulations partly overlap with biosecurity; no specific biosecurity legislation exists.

## **Confidence-Building Measure "F"**

### **Form F**

#### **Declaration of past activities in offensive and/or defensive biological research and development programmes**

Nothing to declare.

## **Confidence-Building Measure "G"**

### **Form G**

#### **Declaration of vaccine production facilities**

There are no vaccine production facilities in Finland.