

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 1st 2022_____

State Party to the Convention: Finland_____

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

National point of contact: Ville Lahelma/ 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 agents¹ on a State Party's territory:

Biosafety level 3 ²	<input checked="" type="checkbox"/> yes / no
Biosafety level 2 ³ (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 Military Medicine, Finnish Institute of Health and Welfare (THL), Finnish Food Authority, Finnish Defence Research Agency (FDRA), University of Helsinki; *i*) Yersinia Research Laboratory, *ii*) Department of Virology - Viral Zoonoses Group, *iii*) *Clostridium botulinum* laboratory, University of Turku and Turku University Hospital / Tyks Laboratories.

¹ Microorganisms pathogenic to humans and/or animals

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

³ 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

Finnish Defence Forces, Centre for Military Medicine

2. Responsible public or private organization or company

Finnish Defence Forces under the Ministry of Defence

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

Finnish Defence Forces

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 units

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

During 2021, the Centre for Military Medicine developed rapid detection assays for selected microbial agents. The Centre for Military Medicine is a member organization in the national Centre for Biothreat Preparedness, which started its activities in 2005.

If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents¹ on a State Party's territory:

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

Exchange of Data on Research Centres and Laboratories #2

1. Name(s) of the Facility

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

2. Responsible public or private organization or company

Finnish 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 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 agents¹ 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 (120m²). Finnish Defence Forces is also using THL's laboratory facilities.

¹ Microorganisms pathogenic to humans and/or animals

Exchange of Data on Research Centres and Laboratories #3

1. Name(s) of the Facility

Finnish Food Authority (Ruokavirasto)

2. Responsible public or private organization or company

Finnish Food 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 agents¹ on a State Party's territory:

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

Exchange of Data on Research Centres and Laboratories #4

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 the development of detection and identification methods for biological warfare agents, microbes and toxins; as well as the development of methods for decontamination of military personnel and equipment from biological contamination. The FDF CBRN field laboratory, located in the FDRA premises, was operated as BSL-2 containment facility during 2021.

If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents¹ on a State Party's territory:

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

Exchange of Data on Research Centres and Laboratories #5

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

Medicum, University of Helsinki

Haartmaninkatu 3

P.O Box 21

FI-00014 University of Helsinki

Helsinki, Finland

Yersinia-research home page: <https://www.helsinki.fi/en/researchgroups/yersinia-and-bacteriophage-research-laboratory>

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 (VTR) for health science research in Finland, the Academy of Finland, Jane and Aatos Erkko Foundation. UPM biomedical.

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

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 agents¹ on a State Party's territory:

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

¹ 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 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 Jane and Aatos Erkko Foundation, Helsinki University Hospital Funds (EVO), University of Helsinki, Academy of Finland, and Sigrid Jusélius Foundation, The Scientific Advisory Board for Defence (MATINE) and Business Finland.

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 unit (HUVZ) conducts research on virology, cell biology, ecology and epidemiology of zoonotic viruses, especially hantaviruses and certain other rodent and bat borne and arboviruses occurring in Northern Europe. Typical viruses that we are growing are SARS-CoV-2, Puumala virus, tick-borne encephalitis virus, dengue, and Zika viruses. The research group operates within the Faculty of Medicine, Department of Virology, and the Department of Veterinary Biosciences at the Veterinary Faculty. In a joint project with University of Nairobi, we are studying bats, rodents, arthropods and human samples from Kenya. There is a BSL-3 facility in both Viikki campus (faculty of Veterinary Medicine) and Meilahti campus (run by HUSLAB where our group rents one room). The Viral Zoonoses unit is connected to the diagnostic laboratory of viral zoonoses at HUSLAB, Helsinki. The group is led by Olli Vapalahti, other principal investigators are Tarja Sironen, Jussi Hepojoki, Tomas Strandin and Eili Huhtamo.

If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents¹ on a State Party's territory:

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

Exchange of Data on Research Centres and Laboratories #7

1. Name(s) of the Facility

Clostridium botulinum laboratory

2. Responsible public or private organization or company

Faculty of Veterinary Medicine, University of Helsinki, Finland

3. Location and postal address

Location

Agnes Sjöbergin katu 2

00790 Helsinki, Finland

Postal address

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

Academic scientific research on the prevalence, epidemiology, genetic heterogeneity, genetic regulatory mechanisms, and toxin pathogenesis 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 agents¹ on a State Party's territory:

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

¹ Microorganisms pathogenic to humans and/or animals

Exchange of Data on Research Centres and Laboratories #8

1. Name(s) of the Facility

University of Turku, Institute of Biomedicine and Turku University Hospital/Tyks Laboratories

2. Responsible public or private organization or company

University of Turku and Turku University Hospital

3. Location and postal address

Medisiina D

Kiinamylynkatu 10

20520 Turku

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 Jane and Aatos Erkko Foundation, Academy of Finland, and Sigrid Jusélius 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 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

The laboratory is working mainly with ordinary occurring endemic and epidemic bacteria and viruses with main emphases on vaccine preventable diseases, *tuberculosis spp*, coronaviruses and zikavirus. The Turku University unit conducts research on virology, cell biology and bacteriology, and Turku University Hospital unit is focusing on diagnostics of human pathogens, mainly tuberculosis and coronaviruses.

If no BSL4 facility is declared in Form A, part 1 (i), indicate the highest biosafety level implemented in facilities handling biological agents¹ on a State Party's territory:

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

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 Security Strategy for Society has 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 since 2003. These strategies (2010, 2017) called for co-operation between each government sector in combating against new threats towards society and outline the general principles for preparedness in Finland. According to the Government Reports on Finnish Foreign and Security Policy 2020, Finland promotes the prevention of proliferation of weapons of mass destruction as well as associated hazardous materials and know-how. Terrorism, epidemics and pandemics are also considered as security threats. The Government's Defence Report 2021 also recognizes CBRN threats. 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 2005. The Centre combines Finnish scientific and laboratory knowhow on biological defence, as well as on biothreat assessment and preparedness. The Centre is composed of three units: the Centre for Military Medicine at the Finnish Defence Forces, the Department of Health Security at the Finnish Institute for Health and Welfare (THL) and Finnish Food Authority (joined the Centre in 2019). Scientific work is carried out at biological safety level 2 and 3 laboratories at the THL and Finnish Food Authority facilities.

Confidence-Building Measure "B"

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

Information on outbreaks of infectious diseases and similar occurrences, that seem to deviate from the normal pattern

No unusual human or animal disease outbreaks were detected in 2021.

Confidence-Building Measure "C"

Encouragement of publication of results and promotion of use of knowledge

Selected publications and references in 2021:

COVID-19 mRNA vaccine induced antibody responses against three SARS-CoV-2 variants. Jalkanen P, Kolehmainen P, Häkkinen HK, Huttunen M, Tähtinen PA, Lundberg R, Maljanen S, Reinholm A, Tauriainen S, Pakkanen SH, Levonen I, Nousiainen A, Miller T, Välimaa H, Ivaska L, Pasternack A, Naves R, Ritvos O, Österlund P, Kuivanen S, Smura T, Hepojoki J, Vapalahti O, Lempainen J, Kakkola L, Kantele A, Julkunen I. *Nat Commun.* 2021 Jun 28;12(1):3991. doi: 10.1038/s41467-021-24285-4.

Genomic monitoring of SARS-CoV-2 uncovers an Nsp1 deletion variant that modulates type I interferon response. Lin JW, Tang C, Wei HC, Du B, Chen C, Wang M, Zhou Y, Yu MX, Cheng L, Kuivanen S, Ogando NS, Levanov L, Zhao Y, Li CL, Zhou R, Li Z, Zhang Y, Sun K, Wang C, Chen L, Xiao X, Zheng X, Chen SS, Zhou Z, Yang R, Zhang D, Xu M, Song J, Wang D, Li Y, Lei S, Zeng W, Yang Q, He P, Zhang Y, Zhou L, Cao L, Luo F, Liu H, Wang L, Ye F, Zhang M, Li M, Fan W, Li X, Li K, Ke B, Xu J, Yang H, He S, Pan M, Yan Y, Zha Y, Jiang L, Yu C, Liu Y, Xu Z, Li Q, Jiang Y, Sun J, Hong W, Wei H, Lu G, Vapalahti O, Luo Y, Wei Y, Connor T, Tan W, Snijder EJ, Smura T, Li W, Geng J, Ying B, Chen L. *Cell Host Microbe.* 2021 Mar 10;29(3):489-502.e8. doi: 10.1016/j.chom.2021.01.015.

Real-life clinical sensitivity of SARS-CoV-2 RT-PCR test in symptomatic patients. Kortela E, Kirjavainen V, Ahava MJ, Jokiranta ST, But A, Lindahl A, Jääskeläinen AE, Jääskeläinen AJ, Järvinen A, Jokela P, Kallio-Kokko H, Loginov R, Mannonen L, Ruotsalainen E, Sironen T, Vapalahti O, Lappalainen M, Kreivi HR, Jarva H, Kurkela S, Kekäläinen E. *PLoS One.* 2021 May 21;16(5):e0251661. doi: 10.1371/journal.pone.0251661.

The mosquitoes of Finland: updated distributions and bionomics. Culverwell CL, Uusitalo RJ, Korhonen EM, Vapalahti OP, Huhtamo E, Harbach RE. *Med Vet Entomol.* 2021 Mar;35(1):1-29. doi: 10.1111/mve.12475.

A 10-Minute "Mix and Read" Antibody Assay for SARS-CoV-2. Rusanen J, Kareinen L, Levanov L, Mero S, Pakkanen SH, Kantele A, Amanat F, Krammer F, Hedman K, Vapalahti O, Hepojoki J. *Viruses.* 2021 Jan 20;13(2):143. doi: 10.3390/v13020143.

Incidence Trends for SARS-CoV-2 Alpha and Beta Variants, Finland, Spring 2021. Kant R, Nguyen PT, Blomqvist S, Erdin M, Alburkat H, Suvanto M, Zakhm F, Salminen V, Olander V, Paloniemi M, Huhti L, Lehtinen S, Luukinen B, Jarva H, Kallio-Kokko H, Kurkela S, Lappalainen M, Liimatainen H, Hannula S, Halkilahti J, Ikonen J, Ikonen N, Helve O, Gunell M, Vuorinen T, Plyusnin I, Lindh E, Ellonen P, Sironen T, Savolainen-Kopra C, Smura T, Vapalahti O. *Emerg Infect Dis.* 2021 Dec;27(12):3137-3141. doi: 10.3201/eid2712.211631.

Experimental Reptarenavirus Infection of Boa constrictor and Python regius. Hetzel U, Korzyukov Y, Keller S, Szivovicza L, Pesch T, Vapalahti O, Kipar A, Hepojoki J. *J Virol.* 2021 Jan 13;95(7):e01968-20. doi: 10.1128/JVI.01968-20.

Common Laboratory Mice Are Susceptible to Infection with the SARS-CoV-2 Beta Variant. Kant R, Kareinen L, Smura T, Freitag TL, Jha SK, Alitalo K, Meri S, Sironen T, Saksela K, Strandin T, Kipar A, Vapalahti O. *Viruses.* 2021 Nov 11;13(11):2263. doi: 10.3390/v13112263.

High-throughput sequencing of two European strains of tick-borne encephalitis virus (TBEV), Hochosterwitz and 1993/783. Paulsen KM, Lamsal A, Bastakoti S, Pettersson JH, Pedersen BN, Stiasny K, Haglund M, Smura T, Vapalahti O, Vikse R, Alfsnes K, Andreassen ÅK. *Ticks Tick Borne Dis.* 2021 Jan;12(1):101557. doi: 10.1016/j.ttbdis.2020.101557.

Hantavirus infection-induced B cell activation elevates free light chains levels in circulation. Hepojoki J, Cabrera LE, Hepojoki S, Bellomo C, Kareinen L, Andersson LC, Vaheri A, Mäkelä S, Mustonen J, Vapalahti O, Martinez V, Strandin T. *PLoS Pathog.* 2021 Aug 11;17(8):e1009843. doi: 10.1371/journal.ppat.1009843. eCollection 2021 Aug.

- Predicting Spatial Patterns of Sindbis Virus (SINV) Infection Risk in Finland Using Vector, Host and Environmental Data.** Uusitalo R, Siljander M, Culverwell CL, Hendrickx G, Lindén A, Dub T, Aalto J, Sane J, Marsboom C, Suvanto MT, Vajda A, Gregow H, Korhonen EM, Huhtamo E, Pellikka P, Vapalahti O. *Int J Environ Res Public Health*. 2021 Jul 1;18(13):7064. doi: 10.3390/ijerph18137064.
- Redondoviridae: High Prevalence and Possibly Chronic Shedding in Human Respiratory Tract, But No Zoonotic Transmission.** Tu NTK, Deng X, Hong NTT, Ny NTH, Phuc TM, Tam PTT, Han DA, Ha LTT, Thwaites G, Doorn HRV, Virtala AK, Delwart E, Baker S, Vapalahti O, Tan LV, On Behalf Of The Visions Consortium. *Viruses*. 2021 Mar 24;13(4):533. doi: 10.3390/v13040533.
- Kinetics of Neutralizing Antibodies of COVID-19 Patients Tested Using Clinical D614G, B.1.1.7, and B 1.351 Isolates in Microneutralization Assays.** Virtanen J, Uusitalo R, Korhonen EM, Aaltonen K, Smura T, Kuivanen S, Pakkanen SH, Mero S, Patjas A, Riekkinen M, Kantele A, Nurmi V, Hedman K, Hepojoki J, Sironen T, Huhtamo E, Vapalahti O. *Viruses*. 2021 May 26;13(6):996. doi: 10.3390/v13060996.
- Evaluation of three rapid lateral flow antigen detection tests for the diagnosis of SARS-CoV-2 infection.** Jääskeläinen AE, Ahava MJ, Jokela P, Szirovicza L, Pohjala S, Vapalahti O, Lappalainen M, Hepojoki J, Kurkela S. *J Clin Virol*. 2021 Apr;137:104785. doi: 10.1016/j.jcv.2021.104785.
- HAVoC, a bioinformatic pipeline for reference-based consensus assembly and lineage assignment for SARS-CoV-2 sequences.** Truong Nguyen PT, Plyusnin I, Sironen T, Vapalahti O, Kant R, Smura T. *BMC Bioinformatics*. 2021 Jul 17;22(1):373. doi: 10.1186/s12859-021-04294-2.
- SARS-CoV-2 infections among healthcare workers at Helsinki University Hospital, Finland, spring 2020: Serosurvey, symptoms and risk factors.** Kantele A, Lääveri T, Kareinen L, Pakkanen SH, Blomgren K, Mero S, Patjas A, Virtanen J, Uusitalo R, Lappalainen M, Järvinen A, Kurkela S, Jääskeläinen AJ, Vapalahti O, Sironen T. *Travel Med Infect Dis*. 2021 Jan-Feb;39:101949. doi: 10.1016/j.tmaid.2020.101949.
- Molecular detection and phylogenetic analysis of *Borrelia miyamotoi* strains from ticks collected in the capital region of Finland.** Zakhm F, Jääskeläinen AJ, Castrén J, Sormunen JJ, Uusitalo R, Smura T, Von Troil G, Kuivanen S, Sironen T, Vapalahti O. *Ticks Tick Borne Dis*. 2021 Mar;12(2):101608. doi: 10.1016/j.ttbdis.2020.101608.
- A Generic, Scalable, and Rapid Time-Resolved Förster Resonance Energy Transfer-Based Assay for Antigen Detection-SARS-CoV-2 as a Proof of Concept.** Rusanen J, Kareinen L, Szirovicza L, Uğurlu H, Levanov L, Jääskeläinen A, Ahava M, Kurkela S, Saksela K, Hedman K, Vapalahti O, Hepojoki J. *mBio*. 2021 May 18;12(3):e00902-21. doi: 10.1128/mBio.00902-21.
- Pan and Core Genome Analysis of 183 *Mycobacterium tuberculosis* Strains Revealed a High Inter-Species Diversity among the Human Adapted Strains.** Zakhm F, Sironen T, Vapalahti O, Kant R. *Antibiotics (Basel)*. 2021 Apr 28;10(5):500. doi: 10.3390/antibiotics10050500.
- The future of zoonotic risk prediction.** Carlson CJ, Farrell MJ, Grange Z, Han BA, Mollentze N, Phelan AL, Rasmussen AL, Albery GF, Bett B, Brett-Major DM, Cohen LE, Dallas T, Eskew EA, Fagre AC, Forbes KM, Gibb R, Halabi S, Hammer CC, Katz R, Kindrachuk J, Muylaert RL, Nutter FB, Ogola J, Olival KJ, Rourke M, Ryan SJ, Ross N, Seifert SN, Sironen T, Standley CJ, Taylor K, Venter M, Webala PW. *Philos Trans R Soc Lond B Biol Sci*. 2021 Nov 8;376(1837):20200358. doi: 10.1098/rstb.2020.0358.
- Zoonotic spill-over of SARS-CoV-2: mink-adapted virus in humans.** Rabalski L, Kosinski M, Mazur-Panasiuk N, Szewczyk B, Bienkowska-Szewczyk K, Kant R, Sironen T, Pyrc K, Grzybek M. *Clin Microbiol Infect*. 2022 Mar;28(3):451.e1-451.e4. doi: 10.1016/j.cmi.2021.12.001.
- Genetic Characterization of Seoul Virus in the Seaport of Cotonou, Benin.** Castel G, Kant R, Badou S, Etougbétché J, Dossou HJ, Gauthier P, Houéménou G, Smura T, Sironen T, Dobigny G. *Emerg Infect Dis*. 2021 Oct;27(10):2704-2706. doi: 10.3201/eid2710.210268.

Severe Acute Respiratory Syndrome Coronavirus 2 in Farmed Mink (*Neovison vison*), Poland. Rabalski L, Kosinski M, Smura T, Aaltonen K, Kant R, Sironen T, Szewczyk B, Grzybek M. *Emerg Infect Dis.* 2021 Sep;27(9):2333-2339. doi: 10.3201/eid2709.210286.

Persistence of neutralizing antibodies a year after SARS-CoV-2 infection in humans. Haveri A, Ekström N, Solastie A, Virta C, Österlund P, Isosaari E, Nohynek H, Palmu AA, Melin M. *Eur J Immunol.* 2021 Dec;51(12):3202-3213. doi: 10.1002/eji.202149535.

A Highly Sensitive and Specific SARS-CoV-2 Spike- and Nucleoprotein-Based Fluorescent Multiplex Immunoassay (FMIA) to Measure IgG, IgA, and IgM Class Antibodies. Solastie A, Virta C, Haveri A, Ekström N, Kantele A, Miettinen S, Lempainen J, Jalkanen P, Kakkola L, Dub T, Julkunen I, Melin M. *Microbiol Spectr.* 2021 Dec 22;9(3):e0113121. doi: 10.1128/Spectrum.01131-21.

SARS-CoV-2 Isolates Show Impaired Replication in Human Immune Cells but Differential Ability to Replicate and Induce Innate Immunity in Lung Epithelial Cells. Jiang M, Kolehmainen P, Kakkola L, Maljanen S, Melén K, Smura T, Julkunen I, Österlund P. *Microbiol Spectr.* 2021 Sep 3;9(1):e0077421. doi: 10.1128/Spectrum.00774-21.

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A longitudinal genomic and functional analysis of *Clostridium botulinum* isolated from an infant botulism case. Douillard FP, Derman Y, Woudstra C, Selby K, Mäklin T, Honkela A, Korkeala H, Lindström M. *Toxicon.* Jan 2021, Vol190, p. S17. <https://doi.org/10.1016/j.toxicon.2020.11.374>.

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Confidence-Building Measure "E"

Declaration of legislation, regulations and other measures

Relating to	Legislation	Regulations	Other measures ¹	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 ² 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 ² 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 ³ and biosecurity ⁴	<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 are included in the Penal Code (39/1889), chapter 11, section 9 (Breach of the prohibition of biological weapons) and section 5 (War Crime), chapter 5, section 3 (Complicity in an offence) and section 6 (Abetting), chapter 34, section 4 (Health endangerment) and section 5 (Aggravated health endangerment), and chapter 34 a (Terrorist offences) are also applicable.

¹ Including guidelines.

² Micro-organisms pathogenic to man, animals and plants in accordance with the Convention.

³ In accordance with the latest version of the WHO Laboratory Biosafety Manual or equivalent national or international guidance.

⁴ 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), Government Decree on the Control of Export of Dual-Use Goods (266/2011) and EC Council Regulation 1334/2000. Corresponding penal provisions are incorporated in the Penal Code, chapter 46. 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, section 87; Act on the Transport of Dangerous Goods (719/1994 as amended), Act on Protecting Plant Health (1110/2019) section 5, Act on Animal Diseases (76/2021), chapter 11, Act on Veterinary Border Control (1277/2019), Act on Genetic Resources (394/2016), Act on Animal By-Products (517/2015). The corresponding penal provisions are included in the Penal Code, chapter 44, sections 4a and 13 and chapter 46, section 4.

Biosafety is regulated by the Occupational Safety and Health Act (738/2002), the Government Decree on Protecting Workers from Risk Arising from Biological Agents (933/2017 amended by Government Decree 747/2020), Decree of the Ministry of Social Affairs and Health on the Classification of Biological Agents (748/2020 amended by Decree 189/2021) and Waste Act (646/2011). Furthermore, regulations concerning biosafety are included in the Communicable Diseases Act (1227/2016) and Government 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"

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

Nothing to declare.

Confidence-Building Measure "G"

Declaration of vaccine production facilities

There are no vaccine production facilities in Finland.