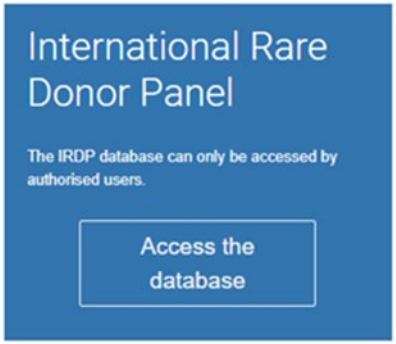


Rare Donor Program

Country: Finland

Finland

Rare Donor Program	
Rare Donor Program	Yes
National Regional or Facility based	National
Number of Rare Donors	220
Definition of Rare	Someone who is negative for a high prevalence antigen where the frequency of this antigen negative phenotype is less than 1 in 1000. People with a combination of antigen negative phenotypes where that combination has a prevalence of less than 1 in 1000 may also be considered rare.
Are the donors listed in the International Rare Donor Panel	Yes
Frozen Inventory	Yes
How are Rare Donors found	Selected donor phenotyping and genotyping Corresponding antibody detected in a donor, patient or antenatal samples Family studies
Number of Rare Donor Units used per year	50 units per year
ISBT Rare Donor WP Blood Shipment form used	Yes
Outcome of incompatible transfusion form used	Yes
Most difficult types to find	Rh null, K null, U-, Vel -, Dib-
Phenotypes confirmed by molecular testing	Most new rare donors identified have molecular testing performed and serology where antisera is available

Finland

Phenotype	Total Active Donors	Group O	O Positive	O Negative	Other ABO/Rh
Co(a-)	14	9	8	1	5
Di(b-)	3	3	3	0	0
GE:-2,-3	1	1	1	0	0
Jk(a-b-)	28	13	8	5	15
Js(b-)	1	1	1	0	0
K+k-	47	25	15	10	22
Kp(b-)	4	2	2	0	2
Lu(a-b-)	1	1	1	0	0
Lu(b-)	6	4	3	1	2
Lu:-12	1	0	0	0	1
LW(a-)	19	11	10	1	8
P neg	7	2	2	0	5
PP1Pk-	1	1	1	0	0
Rh:-51	7	5	5	0	2
U+var P2	1	1	1	0	0
Vel(-)	5	3	2	1	2
Yt(a-)	3	1	0	1	2
D neg e neg (r''r'')	2	2	0	2	0

Finland

How are your rare donors found?

	Yes / No	Method	Comments
Extended phenotyping donors	Yes	All donors typed for C, E, c, e and K - K+ donors typed for k - Immucor Neo Iris. Selected donors (20 % donations) typed for Fy^a, Fy^b, Jk^a, Jk^b, M, S and s – Bio-Rad IH-1000	In most cases the rare phenotype is confirmed with genotyping
Extended genotyping donors	Yes	Selected donors (5 % donations) genotyped using ID CoreXT	Where antisera is available genotype is confirmed by serology.
Family studies	Yes	Recruitment of siblings of donors, patients and pregnant women.	Information to recruit donor siblings is provided by phone or letter and inquiry form done by medical doctors from FRCBS. Siblings of patients and pregnant women are contacted via local blood centre or maternity care centre by the phone call, letter and inquiry form done by laboratory specialists from FRCBS.
Antibody investigations	Yes	All donors are screened for red cell antibodies at the first donation and after immunizing events using the Immucor Neo Iris. Complicated identification cases of patient and all the antenatal samples in Finland are centralized to the FRCBS National Reference laboratory.	Antibody identification may require the use of many different techniques, including molecular testing to determine the specificity.
Other		NA	NA

Red Cell Product Specifications

Country: Finland

Finland

Donor Selection

Donation	Voluntary	
Age or Weight Restrictions	18-71 years, ≥ 50 kg	
Donation Interval	Female 3 months, male 2 months (minimum interval)	
Sexual Activity Precautions	Positive for HIV, Hepatitis B/C, or HTLV	Donor positive: Permanent deferral. If the donor has a resolved HBV (> 2 years), donation is possible if HBsAb is ≥ 200 IU/L. Sex partner positive: Deferral when ongoing relationship, 4 month deferral after last sex contact. Partner HBV carrier: Donation is possible after vaccination and HBsAb proven positive
	Male to male sex	4 month deferral
	Sex worker or contact with sex worker	4 month deferral
Travel Exclusions If donor has returned from an area endemic for the listed infectious illnesses	Dengue	28 day deferral
	Ebola	Min. 8 weeks (usually 6 months because of malaria endemic region)
	Malaria	6 month deferral. Targeted antibody screening for donors, who have had malaria or have lived in an endemic region under the age of 5 years for 6 months or longer.
	West Nile Virus	28 day deferral
Lifestyle	Acupuncture, piercing or tattoo	4 month deferral (no deferral for acupuncture performed by a qualified health professional)
	Drug use (Non-prescribed injected)	Permanent deferral
	Incarceration	NA (risk behaviour covered by other questions)
CJD restrictions	CJD - Donor diagnosed with CJD or knowledge of familial CJD (parents, siblings, offspring, grandparents): Permanent deferral. vCJD - Residency in UK 1980-1996 for more than 6 months or blood transfusion in UK since 1980: Permanent deferral.	
Covid restrictions	COVID19 vaccine administration	No deferral. Exception: If symptoms from vaccination, deferral until feeling well for 2 days.
	COVID infection	Mild: 10 day deferral from onset, and feeling well for at least 2 days . Fever > 38C: 14 day deferral from recovery. Hospitalisation: 3 month deferral.
	Household contact	According to the relevant national public health guidelines.

Finland

Provides details of antibody and nucleic acid testing
Mark tests as NA when not required
Include details of any additional testing required

Mandatory Infectious Diseases Screening of Blood Products

	Screening test	Risk of blood transfusion transmission
HIV	HIV-1/2 AgAb (incl. HIV p24 Ag) & RNA by ID NAT	< 1 in 1 million risk of blood transfusion transmission
HCV	HCV Ab & RNA by ID NAT	< 1 in 1 million risk of blood transfusion transmission
HBV	HBsAg & HBV DNA by ID NAT	< 1 in 1 million risk of blood transfusion transmission
Syphilis	Treponemal Ab	Not calculated. No reported transfusion transmitted syphilis worldwide for many decades > the residual risk is extremely low.
HTLV (1 & 2)	NA	Universal leucodepletion. HTLV risk estimated to be very low in Finnish blood donors. Risk assessment 2016: < 1 in 1 million risk of blood transfusion transmission
CMV	NA	Universal leucodepletion. Leucodepleted blood products are considered CMV safe. Assumption < 1 in 1 million risk of blood transfusion transmission
Zika Virus	NA	ZIKV represents a very low/theoretical risk to blood safety in Finland. There is no zika virus circulating/no local transmission in Finland. The number of imported ZIKV infections reported in Finland is very low. Universal 28 days travel deferral after visiting countries outside the EU-/ETA-countries.
West Nile Virus	NA	WNV represents a very low risk to blood safety in Finland. Finland is a non-endemic region; 28 days deferral after visiting areas with an ongoing WNV epidemic.
Babesia	NA	Babesia spp. is considered a very low risk to blood safety in Finland. Only one case of autochthonous human babesiosis has been reported in Finland (2004).
Trypanosoma cruzi (T. cruzi) Chagas Disease	NA	Only a few cases of human Chagas' disease (imported) have been reported in Finland. Given the small number of cases reported and the relatively small group of immigrants from endemic regions, T. cruzi represents a low risk to blood component safety in Finland.
Malaria antibodies	Plasmodium Ab index (targeted testing for donors, who have had malaria or have lived in an endemic region as a child under the age of 5 years)	As an non-endemic region, the risk for malaria transmission through blood products in Finland is extremely low.

Finland

Red Cells	Leucocyte Depleted	Paediatric Leucocyte Depleted	Washed Leucocyte Depleted
Description	A red cell component obtained by removing the puffy coat and most of the plasma (avg. 18 ml left) after centrifuging whole blood collected into anticoagulant. The red cells are resuspended in additive solution and are filtered to remove most leucocytes.	A leucocyte depleted red cell component divided into three packs of equal volume for the purpose of reducing donor exposure for small paediatric transfusions and to minimise product wastage.	Red cells leucocyte depleted are washed three times with sterile SAG-M solution using a manual process to remove the majority of unwanted plasma proteins, antibodies and electrolytes. The washed red cells are resuspended in SAG-M additive solution.
Anticoagulant	Citrate phosphate dextrose (CPD)	Citrate phosphate dextrose (CPD)	Citrate phosphate dextrose (CPD)
Additive Solution	Saline adenine glucose mannitol (SAG-M)	Saline adenine glucose mannitol (SAG-M)	Saline adenine glucose mannitol (SAG-M)
Average volume	260 ml	90 ml	267 ml
Storage Duration	35 days	35 days	14 days
Leukofiltration	leucocyte reduced to <1x10^6/unit		
Storage Temperature	2°C to 6°C		
Transport Temperature	2°C to 10°C		
Modifications	Phenotyped, irradiated		
Irradiation Policy	Gamma irradiation: 25-50Gy or X-ray irradiation		

Finland

	For Intrauterine Transfusion	Frozen Leucocyte Depleted
Description	A hyper-concentrated red cell component less than five days old with a haematocrit of 0.70–0.85 obtained by removing most of the plasma (avg. 1.8 ml left) /additive solution. The red cells are resuspended in 0.9% saline to achieve the desired haematocrit.	Used for patients with rare red cell phenotypes, or multiple red cell antibodies when liquid-preserved blood cannot fulfil demands. Can be supplied internationally as a frozen product and thawed locally.
Anticoagulant	Citrate phospahte dextrose (CPD)	Citrate phosphate dextrose (CPD)
Additive Solution	0,9% NaCl	Glycerol is added to red cells as a cryoprotectant
Leukofiltration	leucocyte reduced to <1x10^6/unit	leucocyte reduced to <1x10^6/unit
Average volume	88 ml	Thawed unit after deglyceration and resuspending to additive solution 275 ml
Storage Temperature	2°C to 6°C	≤ -65ºC Frozen within 7 days of collection 2°C to 6°C once thawed
Transport Temperature	2°C to 10°C	≤ -65ºC 2°C to 10°C once thawed
Storage Duration	9 hours post hyperconcentration	10 years
Irradiation Policy	Gamma irradiation: 25-50Gy or X-ray irradiation Red cells for IUT must be irradiated.	Not a registered process
Other	ABO, RhD compatible with both mother and fetus, K negative. Should be antigen-negative for maternal alloantibodies, IAT crossmatch compatible with the maternal plasma. If the fetal blood group is unknown use group O, RhD negative red cells.	Prior to transfusion, glycerol must be removed from the thawed component by washing the cells with NaCl. After washing, the red cells are resuspended in additive solution (SAGM) or and must be used within 7 days hours. There will be some loss of red cells during the freezing and thawing process. When requesting frozen red cells it should be noted that thawing and processing time is several hours.

Frozen Inventory

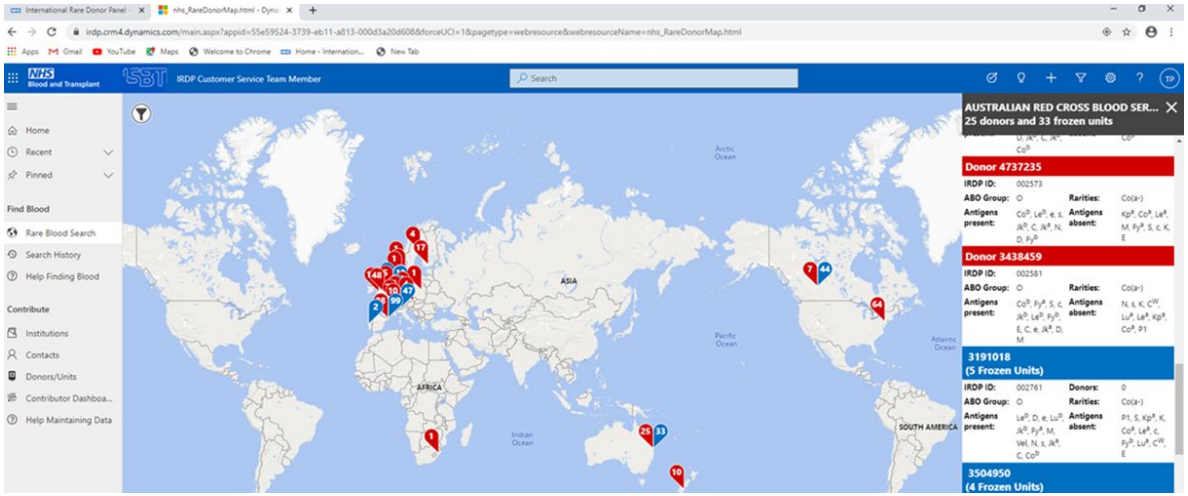
Country: Finland

Finland

General Information	
Freezing Method	Glycerolyte 57 using Haemonetics ACP-.215 cell washer
Frozen Expiry (years)	10 years
Storage Temperature	≤ -65°C
Can inventory be issued and sent frozen	Yes
Thawing Method	Deglycerolisation with 12% and 0.9% saline using Haemonetics ACP-.215 cell washer
Thawed Expiry (days)	7 days
Additive Solution	SAGM
Irradiation Policy	Not a registered process.
IUT and Neonate use	Not a registered process, but may be issued as a patient tailored product
Supply out of date Policy	Exceptionally rare units may be retained beyond expiry. If required for issue they are released with a shorter shelf-life of 3 days.

Finland

Product Specifications	
Volume	286 -300 ml
Supernatant Haemoglobin	< 0,2 g/unit
Haematocrit	0.37 – 0.53 (L/L)
Haemoglobin	≥36 (g/unit)
Osmolarity	≤382 (mOSm/KgH2O)
Residual leucocyte content	< 1.0 x 10^6/unit)
Sterility	No growth
Other	Questionary sent with thawed unit: Was unit transfused? What was the indication for transfusion? Hb before and after transfusion Were there any complications?



Ordering and Shipping

Country: Finland

Finland

Exporting	
Request form available	No, communication done by email according SOP.
Government Requirements	NA
Regulatory Requirements	Rare units can be only delivered to the health service organizations.
Rare Donor Program Requirements	Preferred courier – World Couriers
Other	NA

Finland

Importing	
Government Requirements	NA
Regulatory Requirements	When importing blood units outside the EU, permissions from regulatory authority is needed including certificate of origin for the supplying blood service.
Rare Donor Program Requirements	A copy of all test results for the donation e.g. blood group, phenotype and infectious disease screening Temperature monitored transport (Preferred courier – World Couriers).
Other	NA