

CRYOSTEM - Cryoconservation during allogeneic hematopoietic Stem cell transplantation

Head :Peffault De Latour Régis, Service d'hématologie / Greffe
Calmels Boris, Centre de thérapie cellulaire
Agopian Julie, Associaton CRYOSTEM
Robert Emilie, Association CRYOSTEM

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General	
Identification	
Detailed name	Cryoconservation during allogeneic hematopoietic Stem cell transplantation
Sign or acronym	CRYOSTEM
CNIL registration number, number and date of CPP agreement, AFSSAPS (French Health Products Safety Agency) authorisation	CPP Sud-Méditerranée (17/02/2012) : AC-2011-1420 + DC-2014-2312, CCTIRS (09/02/2012) : 11-710bis, CNIL
General Aspects	
Medical area	Cancer research Hematology Immunology Infectious diseases Pediatrics Rare diseases
Study in connection with Covid-19	No
Health determinants	Iatrogenic
Keywords	Graft-versus-host-disease, GvHD, Allogeneic Hematopoietic Stem Cell Transplantation, HSCT, Biobanking network, Complications
Scientific investigator(s) (Contact)	
Name of the director	Peffault De Latour
Surname	Régis
Address	1, avenue Claude Vellefaux 75010 PARIS

Phone	+ 33 (0)1 42 38 50 73
Unit	Service d'hématologie / Greffe
Organization	Hôpital Saint Louis

Name of the director	Calmels
Surname	Boris
Address	232, boulevard Sainte Marguerite 13009 MARSEILLE
Phone	+ 33 (0)4 91 22 34 41
Unit	Centre de thérapie cellulaire
Organization	Institut Paoli Calmettes

Name of the director	Agopian
Surname	Julie
Address	Association CRYOSTEM Hôtel technologique CS 10002 45 rue Frédéric Joliot-Curie 13382 Marseille cedex 13
Phone	+ 33 (0)4 91 11 88 53
Unit	Associaton CRYOSTEM
Organization	Association CRYOSTEM

Name of the director	Robert
Surname	Emilie
Address	Association CRYOSTEM Hôtel technologique CS 10002 45 rue Frédéric Joliot-Curie 13382 Marseille cedex 13
Phone	+ 33 (0)4 91 11 88 53
Unit	Association CRYOSTEM
Organization	Association CRYOSTEM

Collaborations

Participation in projects, networks and consortia	Yes
Details	CRYOSTEM is the national network/consortium bringing together all French adult and pediatric transplant units and 28 associated biological resource centers, dedicated to understanding and researching the complications of allogeneic hematopoietic stem cell transplantation.
Others	Since 2015, CRYOSTEM has made available nearly 14,000 samples from its collection to promote 27 research projects on graft-versus-host disease and post-transplant complications (18 French teams, 5 North American teams, 1 German team, 1 Swiss team, 2 Australian teams).
Funding	
Funding status	Mixed
Details	ANR "Investissements d'avenir -Grand emprunt"
Governance of the database	
Sponsor(s) or organisation(s) responsible	CRYOSTEM
Organisation status	Private
Presence of scientific or steering committees	Yes
Labelling and database evaluation	MBioLims copyright Modul-Bio, Oracle exploitation system
Additional contact	
Main features	
Type of database	
Type of database	Study databases
Study databases (details)	Cohort study
Database recruitment is carried out by an intermediary	A selection of health institutions and services
Database recruitment is is made on the basis of:	Another treatment or procedure

Database recruitment is carried out as part of an interventional study	No
Additional information regarding sample selection.	Transplant physicians at partner centers in the CRYOSTEM network offer all patients with hematological cancers or serious blood diseases awaiting an allogeneic hematopoietic stem cell transplant the opportunity to participate in the CRYOSTEM project. They receive detailed information about the project. Their participation is validated by signing a consent form provided for this purpose.

Database objective

Main objective	The goal of CryoStem is to create a national, multicenter, prospective, longitudinal, standardized HSCT human-sample collection (derived from adult and pediatric patients) with the purpose of enabling better characterization and prediction of HSCT complications occurrence and outcome, including GvHD. CryoStem has generated a French network involving all the French transplant units, adult and pediatric and 28 Biological Resources Centres. Only in a network such as this may the full potential be realized of having concrete and effective interactions between scientists with top knowledge in specific areas and physicians. CryoStem fosters interactions among internationally recognized experts in advanced biotechnology (genomics, transcriptomics, proteomics, and flow cytometry). Altogether, CryoStem provides a structured approach for a range of different research activities, bringing together leading-edge researchers who can access documented biological (CryoStem) and clinical (ProMISe) samples from transplanted patients in order to better characterize and predict HSCT complications.
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Inclusion criteria	Any patient suffering from a severe blood disease or blood cancer (leukemia, lymphoma, aplastic anemia...) justifying a first HSCT in one of the transplant units of CRYOSTEM network.
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Population type

Age	Newborns (birth to 28 days) Infant (28 days to 2 years) Early childhood (2 to 5 years) Childhood (6 to 13 years)
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Adolescence (13 to 18 years)
Adulthood (19 to 24 years)
Adulthood (25 to 44 years)
Adulthood (45 to 64 years)
Elderly (65 to 79 years)
Great age (80 years and more)

Population covered	Sick population
Pathology	III - Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
Gender	Male Woman
Geography area	National
Detail of the geography area	Metropolitan France
Data collection	
Dates	
Date of first collection (YYYY or MM/YYYY)	2012
Date of last collection (YYYY or MM/YYYY)	2019
Size of the database	
Size of the database (number of individuals)	[1000-10 000[individuals
Details of the number of individuals	6 455 patients and 2 482 donors as of December 2021, 31
Data	
Database activity	Current data collection
Type of data collected	Clinical data Biological data
Clinical data (detail)	Direct physical measures Medical registration
Details of collected clinical data	transplant type and date / relapse / graft failure / second transplant / stages and corticoreistance for the acute GvHD / type, classification and evolution of the chronic GvHD

Biological data (detail)	Blood samples
Presence of a biobank	Yes
Contents of biobank	Plasma Blood cells isolated Others
Details of biobank content	Viable mononuclear cells, plasma, and dried cell pellets
Health parameters studied	Health event/morbidity Health event/mortality
Procedures	
Data collection method	Data are collected via a unique document filled in as the time of blood samples by the transplant units staff in charge of the patient medical follow-up.
Quality procedure(s) used	Sampling and sending / blood samples reception and processing / provision
Participant monitoring	Yes
Details on monitoring of participants	Duration of CryoStem : 7 years (inclusion : 6 years)
Links to administrative sources	No
Promotion and access	
Promotion	
Link to the document	https://doi.org/10.1038/s41467-019-13498-3
Description	Metabolomics analysis of human acute graft-versus-host disease reveals changes in host and microbiota-derived metabolites
Link to the document	https://doi.org/10.5334/ojb.58
Description	CRYOSTEM Biobank: A National Prospective, Standardized Collection to Better Characterize Allogeneic Hematopoietic Stem Cell Transplantation Complications
Link to the document	https://doi.org/10.1182/bloodadvances.2019001032
Description	Cellular and molecular profiling of T-cell subsets at the onset of human acute GVHD

Link to the document	https://doi.org/10.1002/jlb.5a1019-522rr
Description	Innate lymphoid cell recovery and occurrence of GvHD after hematopoietic stem cell transplantation
Link to the document	https://doi.org/10.1101/2021.04.29.21256184
Description	Human MAIT cells are devoid of alloreactive potential: prompting their use as universal cells for adoptive immune therapy
Link to the document	https://doi.org/10.1126/scitranslmed.abg3083
Description	Operational tolerance after hematopoietic stem cell transplantation is characterized by distinct transcriptional, phenotypic, and metabolic signatures
Link to the document	https://doi.org/10.3390/pathogens11080928
Description	High Predictive Value of the Soluble ZEBRA Antigen (Epstein-Barr Virus Trans-Activator Zta) in Transplant Patients with PTLD
Link to the document	https://doi.org/10.1182/blood.2022016926
Description	Azithromycin promotes relapse by disrupting immune and metabolic networks after allogeneic stem cell transplantation
Link to the document	https://doi.org/10.3389/fimmu.2023.1028162
Description	Comparison of NK alloreactivity prediction models based on KIR-MHC interactions in haematopoietic stem cell transplantation
Link to the document	https://doi.org/10.1016/j.chom.2023.06.009
Description	Circulating T cell profiles associate with enterotype signatures underlying hematological malignancy relapses
Other information	The embargo on the CRYOSTEM samples has ended on 2015/04/15. Since 2015, and as of December 2024, 31, almost 14 000 samples have been provided to 27 research projects on GvHD and HSCT complications.
Access	
Presence of document that lists variables and coding procedures	Yes

Terms of data access (charter for data provision, format of data, availability delay)

Any investigator selected by CRYOSTEM Scientific Committee commits himself to respect the general terms of the current call of projects to access the collection biological resources.
The investigator could access to demographical and clinical information, extracted from the European register of the EBMT (European Society for Blood and Marrow Transplantation), provided via an Excel file made anonymous.
Once selected, CRYOSTEM project managers schedule interviews with the investigators in order to identify and select the samples of interest. The delay of provision depend on the number of the samples waited for.

Access to aggregated data

Access on specific project only

Access to individual data

Access on specific project only