Long COVID Cohort

An outstanding cohort from BBMRI.at partner Medical University of Vienna at MedUni Wien Biobank

This long COVID cohort is part of a study at the Department of Cardiology of the Medical University of Vienna by principle investigator Prof. Dr. Mariann Gyöngyösi. The samples are processed with the biobanking expertise (e.g. sample pre-analytics, ethical and legal issues, etc.) and support of the MedUni Wien Biobank and stored at its provided infrastructure. The purpose of this collection is to congregate a databank of biomaterial (serum, EDTA-plasma, citrate plasma, plasma for ccfDNA-isolation, PaxGene whole blood RNA) from patients with post COVID-19 disease (i.e. Long COVID) for future investigations into prognostic and diagnostic biomarkers. To date, around 400 long COVID patients with well-documented clinical, clinical laboratory and imaging parameters have been included.

Profile of the cohort:

Research Area	Long COVID
Cohort Type	Population based cohort
Cohort Size	• Planned: 2,000 patients (incl. long-COVID patients, post-COVID infection without long-COVID syndrome, healthy controls w/without vaccination, patients with mild form of ischemic cardiomyopathy with vaccination) • Number of visits: 2 (more if clinically indicated) • Number of samples: 16,000 (i.e. 8 of each patient per visit)
Biological Sample Types (with storage condition)	• Serum (-80° C), aliquoted • EDTA plasma (-80° C), aliquoted • ccfDNA (-80° C), ISO 20186-3:2019 • PaxGene whole blood RNA (-80° C) • PBMC (-80° C) • Citrate Plasma (-20°C)
Associated Data	• Demographics • Medical history • Concomitant medication • Symptoms • Physical examination • Electrocardiogram (ECG) • Clinical laboratory • Echocardiography

Donors Details	• Inclusion criteria: Long COVID-19 syndrome Past COVID-19 infection verified by PCR • Exclusion criteria: Acute or chronic systemic disease (e.g. inflammatory or oncologic) First presentation within 1 month post infection • Age range 18-80 years • Gender: both • Health/disease status: Long COVID syndrome • Regional criteria: none • Treatment, medication documented
Collection Period	Start: March 2021 – ongoing
Informed Consent	Broad biobank consent
Access	Yes – collaboration preferred
Quality Standards	QMS standards, such as: • ISO 9001:2015 • ISO 15189
Contact	Principle investigator: Univ. Prof. Dr. Mariann Pavone-Gyöngyösi, mariann.gyongyosi@meduniwien.ac.az
Publications (scientific)	• Kovarik JJ, Bileck A, Hagn G, Meier-Menches SM, Frey T, Kaempf A, Hollenstein M, Shoumariyeh T, Skos L, Reiter B, Gerner MC, Spannbauer A, Hasimbegovic E, Schmidl D, Garhöfer G, Gyöngyösi M, Schmetterer KG, Gerner C. A multi-omics based anti-inflammatory immune signature characterizes long COVID-19 syndrome. iScience. 2023 Jan 20;26(1):105717. doi: 10.1016/j.isci.2022.105717. Epub 2022 Dec 5. PMID: 36507225; PMCID: PMC9719844. • Prayer F, Kienast P, Strassl A, Moser PT, Bernitzky D, Milacek C, Gyöngyösi M, Kifjak D, Röhrich S, Beer L, Watzenboeck ML, Milos RI, Wassipaul C, Gompelmann D, Herold CJ, Prosch H, Heidinger BH. Detection of Post-COVID-19 Lung Abnormalities: Photon-counting CT versus Same-day Energy-integrating Detector CT. Radiology. 2022 Nov 29:222087. doi: 10.1148/radiol.222087. Epub ahead of print. PMID: 36445225; PMCID: PMC9718279. • Gyöngyösi M, Alcaide P, Asselbergs FW, Brundel BJJM, Camici GG, da Costa Martins P, Ferdinandy P, Fontana M, Girao H, Gnecchi M, Gollmann-Tepeköylü C, Kleinbongard P, Krieg T, Madonna R, Paillard M, Pantazis A, Perrino C, Pesce M, Schiattarella GG, Sluijter JPG, Steffens S, Tschöpe C, Van Linthout S, Davidson SM. Long COVID and the cardiovascular system – elucidating causes and cellular mechanisms in order to develop targeted diagnostic and therapeutic strategies: A joint Scientific Statement of the ESC Working Groups on Cellular Biology of the Heart and Myocardial & Pericardial Diseases. Cardiovasc Res. 2022 Jul 25:cvac115. doi: 10.1093/cvr/cvac115. Epub ahead of print. PMID: 35875883; PMCID: PMC9384470.
Media articles	• Post-COVID-19 Outpatient Care and Biomarkers (POSTCOV) .. read> • PostCOV Projekt (German) .. read>
Research projects	• Austrian Science Fund (FWF) KLI 1064-B • Medizinisch-Wissenschaftlicher Fond des Bürgermeisters der Bundeshauptstadt Wien, Project number: 21176