COVID-19 Convalescent Cohort

An outstanding cohort at Biobank Graz (Med Uni Graz), which is based on a prospective sample cohort for current research on SARS-CoV-2

Biobank Graz recruited participants (from Austria) who had recovered from COVID-19 and grouped them into two sub cohorts (see profile table). Volunteers were invited to fill in a questionnaire and donate various types of samples at different time points (see study design and table).

This cohort serves for

- the development and validation of new antibody tests and neutralization assays
- the investigation of antibody titres over time
- a better characterization of the course of COVID-19
- the identification of diagnostic or prognostic biomarkers

Study design
Participants are invited five times, i.e. 1st visit (time point 0), 2nd visit (after 1 month), 3rd visit (after 2 months), 4th visit (after 5 months), 5th visit (after 12 months), where the samples are collected. At the 1st visit, donors also fill in a questionnaire concerning symptoms, comorbidities, pre-history and lifestyle.

Profile of the cohort:

Research Area	COVID-19 recovered
Cohort Type	▪ Prospective ▪ Population based ▪ Longitudinal
Cohort Size	▪ 366 donors ▪ More than 35 000 aliquots ▪ 5 visits
Biological Sample Types (with storage condition)	▪ Serum (-80°C) ▪ EDTA plasma (-80°C) ▪ EDTA buffy coat (-80°C) ▪ Li-Hep plasma (-80°C) ▪ Na- Citrate plasma (-80°C) ▪ DNA (isolated from buffy, -80°C) ▪ Saliva (-80°C) ▪ Swabs (e.g. naso- and oropharyngeal) (-80 °C)

Associated Data	▪ Symptom characteristics ▪ Clinical history (comorbidities) ▪ Lifestyle and prehistory ▪ Antibody levels
Donors Details	▪ Volunteers who recovered from COVID-19 ▪ Sub cohort I: (342 participants) *) Persons who were officially tested positive for an infection by PCR test with the SARS-CoV-2 virus, showed symptoms of COVID-19 and recovered. ▪ Sub cohort II: (22 participants) *) Persons who lived together or got in contact with a person officially tested positive by PCR test for SARS-CoV-2 and showed symptoms of COVID-19 disease within 14 days, but were not tested themselves, and recovered. *) Persons who showed leading COVID-19 symptoms (fever, dry cough, loss of smell or taste, diarrhoea, fatigue) since December 2019, but were not tested themselves, independent of whether they had contact to a person positive tested for SARS-CoV-2, and recovered.
Collection Period	2020 – 2022
Informed Consent	Study specific consent Broad consent
Access	Yes – collaboration preferred
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Informed Consent	Study specific consent Broad consent
Access	Yes – collaboration preferred
Quality Standards	Quality management: ISO 9001:2015 (SOPs)
Contact	Principle investigator: Univ.-Prof. Dr.med.univ. Robert Krause Biobank Graz: biobank-pm@medunigraz.at

Publications (scientific)	▪ "Long-lasting immune response to a mild course of PCR-confirmed SARSCoV-2 infection: A cohort study" Kral S, Banfi C, Niedrist T, Sareban N, Guelly C, Kriegl L, Schiffmann S, Zurl C, Herrmann M, Steinmetz I, Schlenke P, Berghold A, Krause R. https://pubmed.ncbi.nlm.nih.gov/34433071/ ▪ "Longitudinal comparison of automated SARS-CoV-2 serology assays in assessing virus neutralization capacity in COVID-19 convalescent sera" Niedrist T, Drexler C, Torreiter PP, Matejka J, Strahlhofer-Augsten M, Kral S, Riegler S, Gülly C, Zurl C, Kriegl L, Krause R, Berghold A, Steinmetz I, Schlenke P, Herrmann M. https://pubmed.ncbi.nlm.nih.gov/35085385/ ▪ "Lower Levels of ABO Anti-A and Anti-B of IgM, IgG and IgA Isotypes in the Serum but Not the Saliva of COVID-19 Convalescents." Matzhold EM, Körmöczi GF, Banfi C, Schönbacher M, Drexler-Helmberg C, Steinmetz I, Berghold A, Schlenke P, Wagner GE, Stoisser A, Kleinhappl B, Mayr WR, Wagner T https://pubmed.ncbi.nlm.nih.gov/35956128/ ▪ "Preanalytical stability of SARS-CoV-2 anti-nucleocapsid antibodies" Niedrist T, Kriegl L, Zurl CJ, Schmidt F, Perkmann-Nagele N, Mucher P, Repl M, Flieder I, Radakovics A, Sieghart D, Radner H, Aletaha D, Binder CJ, Gülly C, Krause R, Herrmann M, Wagner OF, Perkmann T, Haslacher H. https://pubmed.ncbi.nlm.nih.gov/36323338/ ▪ "Development of a Rapid Live SARS-CoV-2 Neutralization Assay Based on a qPCR Readout" Lichtenegger, S; Saiger, S; Hardt, M; Kulnik, S; Wagner, GE; Kleinhappl, B; Assig, K; Zauner, A; Ober, M; Kimpel, J; von, Laer, D; Zatloukal, K; Steinmetz, I. https://pubmed.ncbi.nlm.nih.gov/35642515/ ▪ "SARS-CoV-2 neutralizing activity of polyphenols in a special green tea extract preparation" Kicker, E; Tittel, G; Schaller, T; Pferschy-Wenzig, EM; Zatloukal, K; Bauer, R. https://pubmed.ncbi.nlm.nih.gov/35144138/
Media articles	"BIOBANK Graz COVID-19 Genesene leisten wichtigen Beitrag zur aktuellen Forschung" MEFO graz, 30 Minuten 30min_02_2021 (adobe.com)
Research projects	This work was supported by the Austrian BMBFW project BBMRI.at [BMBFW 10.470/0010-V/3c/2018 (2018–2023)], cultural office of the city of Graz and MEFOgraz. Antibody test kits were kindly provided by Roche Diagnostics.

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