Molecular Health and *Universitätsmedizin Essen* [Essen University Hospital] launch collaborative project to improve care for COVID-19 patients

Pioneering project to use clinical data with evidence-based disease model for better diagnosis and therapy in Germany.

Essen/Heidelberg, August 9, 2021. On August 1, 2021, the IT biotech company Molecular Health (MH) and *Universitätsklinikum Essen* kicked off a collaborative project funded by the BMG (*Bundesministerium für Gesundheit* [German Federal Ministry of Health]) to provide holistic and evidence-based care for COVID-19 patients. Using the MH Corona Explorer, a deeper understanding of the disease will be generated, linking the molecular basis to the clinical course of the disease. The goal is to enable innovative approaches to the diagnosis and treatment of COVID-19 patients and thus improve patient care.

The COVID-19 pandemic has crippled the world since 2020, with more than 190 million infections and more than 4 million deaths now reported. However, the state of knowledge about the disease is still insufficient, especially in terms of understanding COVID-19 disease at the molecular level in relation to a wide variety of clinical manifestations and symptoms. However, this understanding is critical to optimize diagnosis and treatment.

"To close this gap, we at Molecular Health have developed an enhanced COVID-19 disease model ("MH Corona Explorer") based on our curated knowledge base ("DATAOME") that links and represents the different symptoms of the disease with their molecular pathways. We are delighted to be able to implement this innovative collaborative project together with the experts and clinical expertise of *Universitätsmedizin Essen*," said Dr. Anna Laib, Head of Medical Affairs and project leader of the Molecular Health collaboration at the kick-off meeting on August 3, 2021 at *Uniklinikum Essen*.

MH Corona Explorer's *in-silico* approach as a browser-based application draws on biomedical knowledge published worldwide within the Molecular Health database. Using this digital model, the various clinical molecular features of COVID-19 are identified. This approach explains the long-term course of the disease, in addition to the variety of symptoms, while generating guidance for new treatment approaches.

To systematically advance the decoding of the disease, clinical data from up to 2,000 COVID-19 patients treated at the *Universitätsmedizin Essen* will be analyzed and linked to the digital model to identify new drug targets and biomarkers. Findings from the collaborative project, which is scheduled to run for approximately one year, may also provide defined predictors of progression to severe disease or even long-term disease due to COVID-19 ("long Covid"). "This is not just about funding research, but about funding the future of medicine - with this perspective, the joint project between the *Universitätsmedizin Essen* and Molecular Health offers an investment in the further development of healthcare," commented Nick Schneider, Head of Division at the *Bundesministerium für Gesundheit*.

The relevance of the project is underlined by PD Dr. Adalbert Krawczyk, laboratory manager of infectiology and project manager on the part of the Universitätsmedizin Essen: "Not only do we have an extensive clinical dataset of COVID-19 patients, but we also have a large

biospecimen set to control for potential biomarkers - we would like to capture these for early and reliable risk assessment of COVID-19 sufferers to use predictively or prognostically."

Prof. Dr. med. Oliver Witzke, Director of the *Klinik für Infektiologie* [Clinic for Infectious Diseases] and the *Westdeutsches Zentrum für Infektiologie* [West German Center for Infectious Diseases] and project leader on the part of the *Universitätsklinikums Essen*, looks forward to the joint project with excitement: "Through this collaboration, our clinical knowledge from the field, along with Molecular Health's in-depth COVID-19 disease model, can be made directly useful to physicians in patient care. In the future, we hope to be able to keep our finger on the pulse of the pandemic by networking information on new virus variants and correspondingly changing courses of disease: Emerging adaptable treatment strategies could serve as a key component of care, contributing to the management of this pandemic." Initial results of the model project will be presented at a workshop this coming November.

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About Molecular Health:

Molecular Health is an international biotech IT company based in Heidelberg, Germany, that has been developing innovative software in the areas of *in silico* and precision medicine since 2004. Molecular Health's solutions make it possible to transform large amounts of data into evidence-based, medically relevant decision support. They are used where precision medical patient care or efficient drug development requires increasingly complex data interpretations. At Molecular Health, specialists from the fields of medicine, data science, biology and bioinformatics, and software development are working to make Big Data useful for healthcare. The result is intuitive analysis applications that are individually tailored to different healthcare requirements. Molecular Health is a portfolio company of dievini Hopp Biotech holding GmbH & Co. KG.