

Synthego's CRISPR platform enables faster ID of potential Coronavirus treatment

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Synthego, the genome engineering company, has collaborated with The Krogan Lab, a world-renowned scientific research unit at the Quantitative Biosciences Institute (QBI) at the University of California, San Francisco (UCSF), to deliver multiple CRISPR-based engineered cell lines to accelerate the study of potential treatment targets for SARS-CoV-2, the novel coronavirus that causes COVID-19 disease. In a study published in *Science*, the consortium of researchers used Synthego-engineered cells targeting more than 300 genes that the virus interacts with inside a human cell.

"Utilizing Synthego's industry-leading CRISPR-based genome engineering platform was essential in accelerating our research at QBI's Coronavirus Research Group," said Dr. Krogan, a professor at UCSF, Director of QBI, and a senior investigator at the Gladstone Institutes.

"The precision and reproducibility of CRISPR were key to helping us study how SARS-CoV-2 affects cellular pathways and ultimately causes disease, enhancing our validation of promising therapeutic targets that may offer broad protection against infection from coronaviruses."

In this collaboration, Synthego joined academic and private sector scientists from UCSF, QBI's Coronavirus Research Group (QCRG), Gladstone Institutes, EMBL's European Bioinformatics Institute (EMBL-EBI) in Cambridge, England, Georgia Institute of Technology, the Icahn School of Medicine at Mount Sinai in New York, Institut Pasteur in Paris, University of Freiburg in Germany, and University of Sheffield in the UK.

Inspired by UCSF's *Nature* publication, "A SARS-CoV-2 Protein Interaction Map Reveals Targets for Drug-Repurposing," Synthego

extended its expertise and platform technologies to validate the targets identified in the study by editing genes individually and as a series. This approach revealed which genes and cellular pathways are essential for the virus to infect and or grow inside human cells through infectivity analysis.

"Contributing to the critical work of an international team of almost 200 researchers from 14 leading institutions in six countries has been a tremendous honor," said Kevin Holden, a co-author of the study and head of Science at Synthego. "Recent publications, combined with our upcoming World CRISPR Day, highlight our growing scientific expertise and leadership in applying the latest genome engineering platform innovations to advancing life sciences research and clinical development."

Dr. Krogan will be speaking in greater detail about the *Science* study and the [collaborative effort](#) at Synthego's upcoming World CRISPR Day symposium, which will also feature a keynote address from Nobel Laureate Jennifer Doudna, Ph.D.

More information: David E. Gordon et al. A SARS-CoV-2 protein interaction map reveals targets for drug repurposing, *Nature* (2020).
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Provided by Synthego

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