



Absolute Antibody and University of Zurich Collaborate to Offer Synthetic Nanobodies Against SARS-CoV-2 Receptor Binding Domain

Recombinant engineered antibodies for COVID-19 diagnostics and therapeutic development

Redcar, UK, July 8, 2020. [Absolute Antibody Ltd.](#), an industry-leading provider of recombinant antibody products and services, today announced a partnership with University of Zurich to offer synthetic nanobodies against the receptor binding domain (RBD) of SARS-CoV-2, the coronavirus that causes COVID-19. Under the partnership, the original nanobodies and newly engineered formats are now available to the global research community for use as serological controls and in COVID-19 therapeutic development. The synthetic nanobodies possess particular promise for the development of inhalable drugs, which could offer a convenient treatment option for the COVID-19 pandemic.

Nanobodies are small antibody fragments that can reach previously inaccessible parts of the body due to their compact size. Researchers are exploring their potential as inhalable COVID-19 drugs, which would be easier to administer and reach patients' lungs faster than other treatment formulations. The laboratory of Markus Seeger at University of Zurich developed a rapid *in vitro* selection platform to generate synthetic nanobodies, known as sybodies, against the receptor binding domain (RBD) of SARS-CoV-2. Within a two-week timeframe, the lab had identified more than 60 unique anti-RBD sybodies from combinatorial display libraries.

Further research showed that six of the sybodies bound SARS-CoV-2 spike protein with very high affinity, while five of those also inhibited ACE2, the host cell receptor to which SARS-CoV-2 binds to initiate the COVID-19 infection. Moreover, two of the sybodies can simultaneously bind the RBD, which could enable the construction of a polyvalent antiviral drug. The SARS-CoV-2 sybodies are therefore valuable tools for coronavirus research, diagnostics and therapeutic development, and the panel is now available to researchers worldwide via Absolute Antibody's online catalog.

Absolute Antibody recombinantly produces the SARS-CoV-2 synthetic nanobodies for ensured batch-to-batch reproducibility, high purity and low endotoxin levels. In addition, Absolute Antibody has used antibody engineering to fuse the nanobodies to Fc domains in different species, isotypes and subtypes. For example, the anti-RBD binders are now available with human IgG1, IgG3, IgM and IgA domains for use as serological controls. These recombinant engineered antibodies extend the applications of the sybodies by varying effector function and permitting increased half-life in *in vivo* studies.

"We are excited to partner with the Seeger lab to make their novel synthetic nanobodies more widely available to the research community," said Dr. Michael Fiebig, Vice President Product Portfolio & Innovation at Absolute Antibody. "Combined with Absolute Antibody's unique antibody engineering approach, we can harness even more potential from the nanobodies and help scientists worldwide fight against the COVID-19 pandemic."

"The global research community has been working at unprecedented speeds to fight COVID-19," said Dr. Markus Seeger, Professor at the Institute of Medical Microbiology of the University of Zurich. "By partnering with Absolute Antibody, we have extended the reach and applications of our new synthetic nanobodies, furthering their potential in the race to develop urgently required therapeutics."

In addition to the new synthetic antibodies, Absolute Antibody offers a variety of other engineered reagents for coronavirus research, including SARS-CoV-2 spike glycoprotein and nucleoprotein antibodies, ACE2 Fc fusion



proteins, and anti-human immunoglobulin antibodies for use in diagnostic tests. Absolute Antibody is also supporting coronavirus research by providing antibody engineering and manufacturing services, such as the production of gram quantities of human antibodies sequenced from recovering COVID-19 patients.

For more information, and a full list of available synthetic nanobodies and engineered antibodies, please visit our website [here](#).

About Absolute Antibody, Ltd.

Absolute Antibody is a rapidly growing company with a vision to make recombinant antibody technology accessible to all. We offer antibody sequencing, engineering and recombinant production as custom services, as well as a unique catalog of recombinant antibodies, engineered into new and useful formats. [Learn more here](#).

About University of Zurich

The University of Zurich (UZH) is a member of the League of European Research Universities and numbers among Europe's most prestigious research institutions. UZH's international standing is reflected in the many renowned academic distinctions conferred upon its members, including twelve Nobel Prizes. As Switzerland's largest university, UZH has a current enrollment of over 26,000 students and offers the most comprehensive academic program in the country. Over 5,000 excellent members of staff teach and perform research at one of the University's 150 departments, including over 675 professors. UZH also looks back on a rich history, having been founded in 1833 as Europe's first university to be established by a democratic political System. The research group of Markus Seeger is located at the Institute of Medical Microbiology. For more information please visit www.uzh.ch and <http://www.imm.uzh.ch/de/research/experimental/teamseeger.html>.

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