Molecular Partners Confirms Ultra-Potent Inhibition of SARS-CoV-2 Live Virus by Anti-COVID-19 DARPin® Candidates

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- **DARPin® antiviral candidates demonstrate low picomolar potency in live virus assay**
- **Candidate construction complete; two candidates ready for preclinical development & manufacturing**
- **Therapeutic profile of a highly potent antiviral biologic with a long half-life supports both a prophylactic and therapeutic approach**
- **Initiation of clinical studies planned for H2 2020**

Zurich-Schlieren, Switzerland, May 7, 2020. Molecular Partners AG (SIX: MOLN), a clinical-stage biotech company that is developing a new class of custom-built protein therapeutics known as DARPin® therapeutics, today announced completion of *in vitro* potency assessments of its DARPin® candidates targeting live, replicating coronavirus SARS-CoV-2. These candidates show extremely robust antiviral activity, with several candidates demonstrating complete neutralization with low picomolar potency. This suggests only very small amounts of these candidates may be required for therapeutic effect, which complements the company's ability to rapidly manufacture DARPin® candidates with high yields.

"We are greatly encouraged by the emerging therapeutic profile of our program, that we believe suits the needs of this global pandemic. Our thanks to our colleagues at the Spiez Laboratory for working with us in testing our candidates against the live virus. Given the potency we see from these candidates, combined with characteristics of DARPin® therapeutics such as their manufacturability, low immunogenicity and shelf-stability, we are confident in moving to the next phase of work," said Patrick Amstutz, Chief Executive Officer of Molecular Partners. "We continue to progress this program at high speed and expect to select a clinical candidate in the coming weeks, while we advance our plans for large-scale GMP manufacturing."

The DARPin® candidates are half-life-extended and contain three distinct monomer DARPin® proteins that can simultaneously target the virus in different key areas, leading to cooperative binding and contributing to the extremely high potency now seen *in vitro*. The approach also allows neutralization of the virus via multiple mechanisms. Another significant advantage of a multi-specific antiviral is its potential ability to protect against viral 'escape', whereby a virus may develop resistance to any one antiviral mechanism.

The anti-COVID-19 candidates have subsequently been tested against the live virus, with assistance from the Spiez Laboratory, a division of the Swiss Federal Office for Civil Protection. In the completed *in vitro* potency assessments, dose-response assays with live, infectious SARS-CoV-2 virus showed that the selected candidates had an effective concentration for 50% inhibition (EC50) of less than 100 picomolar (pM) and completely inhibited infectious SARS-CoV-2 virion replication at low triple-digit pM concentrations.

"The DARPin® candidates show potent ant-viral activity against SARS-CoV-2 in our in vitro assay at Spiez Lab. We are looking forward to continue working with the Molecular Partners team on this project," said Dr. Olivier Engler , Head of Virology at Spiez Laboratory.

From these tests, two candidates have been identified and will now move into *in vivo* studies, which will begin in May 2020. In parallel, GMP manufacturing is being secured, and the company is preparing for initiation of clinical studies in H2 2020.

About Molecular Partners' anti-COVID-19 program

Molecular Partners is advancing antiviral DARPin® candidates with strong binding and neutralizing qualities against multiple epitopes on the SARS-CoV-2 spike protein that are crucial for infection. The company's selection of a multi-specific DARPin® lead candidate will be based on its capability to perform three distinct mechanisms of action: blocking binding of the human ACE2 receptor, the virus's primary docking mechanism to host cells; blocking binding of a specific protease essential for spike protein activation; and "handcuffing" the spike protein, preventing the conformational change it undergoes prior to injection of viral RNA into the human cell. One advantage of a multi-specific antiviral is its potential ability to protect against viral 'escape', whereby a virus may develop resistance to any one antiviral mechanism. The final candidate is also expected to have its half-life enhanced with a DARPin® domain that binds to human serum albumin (HSA) to support long-acting activity.

The construction of multi-specific candidates from monospecific proteins is the foundation of Molecular Partners' drug discovery engine, and has yielded multiple clinical candidates in other indications.

About DARPin® therapeutics

DARPin® therapeutics are a new class of custom-built protein therapeutics based on natural binding proteins that open a new dimension of multi-functionality and multi-target specificity in drug design. A single DARPin® candidate can engage more than five targets, and its flexible architecture and small size offer benefits over conventional monoclonal antibodies or other currently available protein therapeutics. DARPin® therapeutics have been clinically validated through to registration via the development of abicipar, Molecular Partners' most advanced DARPin® drug candidate. The DARPin® platform is a fast and cost-effective drug discovery engine, producing drug candidates with optimized properties for development and very high production yields. DARPin® is a registered trademark owned by Molecular Partners AG.

About Molecular Partners AG

Molecular Partners AG is a clinical-stage biotech company developing a new class of custom-built proteins known as DARPin® therapeutics, designed to address challenges current modalities cannot. The company has compounds in various stages of clinical and preclinical development with a focus on oncology. Molecular Partners has formed partnerships with leading pharmaceutical companies to advance DARPin® therapeutics across multiple

therapeutic areas.

For more information regarding Molecular Partners AG, go to: www.molecularpartners.com.

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