Kinarus Therapeutics' KIN001 Shows Strong Antiviral Activity Against SARS-CoV-2 and Variants of Concern

- **Researchers at Friedrich-Alexander-Universität Erlangen-Nürnberg and Kinarus showed antiviral efficacy of KIN001 against SARS-CoV-2 and its variants of concern *in vitro***
- **Interim data in Q3 for KINETIC, Phase 2 trial of KIN001 in hospitalized COVID-19 patients**
- **KINFAST Phase 2 trial of KIN001 in ambulatory COVID-19 patients to start this summer**

Basel, Switzerland, 20 June 2022. Kinarus Therapeutics Holding AG (SIX: KNRS) ("Kinarus"), a clinical-stage biopharmaceutical company developing novel therapeutics to treat viral, respiratory, and ophthalmic diseases, announced publication today in the peer-reviewed *International Journal of Molecular Sciences* of data showing KIN001's strong antiviral efficacy against the original SARS-CoV-2 strain and variants of concern (VOC).

The collaboration between virologists at the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) and Kinarus showed that KIN001 almost completely blocked virus replication in multiple human cell lines for all SARS-CoV-2 strains, including VOC, like the highly infectious delta and omicron variants.

Prof. Ulrich Schubert from the Institute of Clinical and Molecular Virology at the Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, and principal investigator of the study, said: "We have shown that KIN001 can block the replication of SARS-CoV-2 in various human cell lines. More important, we demonstrate that KIN001 is effective against highly infectious VOCs including the currently dominant omicron variant. Our results indicate that KIN001 may be an effective therapy for the treatment of SARS-CoV-2 infection for present and potential future variants."

Kinarus previously announced that it had received a grant of up to CHF 7 million from the Programme for COVID-19 medicines of the Swiss Federal Office of Public Health to support KIN001's clinical development. The first Phase 2 clinical trial of KIN001 to treat hospitalized COVID-19 patients ("KINETIC") had enrolled 130 patients as of June 6, 2022, and interim data are expected to be available late in Q3 2022. A second Phase 2 trial of KIN001 to treat ambulatory COVID-19 patients ("KINFAST") recently received regulatory authorization in Switzerland and Germany and will be initiated this Summer.

"It is highly encouraging that equivalent potency of KIN001 was observed against SARS-CoV-2 and the VOCs, including delta and omicron. This leads to the conclusion that KIN001 will also likely demonstrate anti-viral properties against future variants," said Alexander Bausch, PhD, CEO of Kinarus. "This bodes well for the ongoing Phase 2 KINETIC study of KIN001 in hospitalized Covid-19 patients; we look forward to the interim data around the end of the third quarter."

KIN001 is a proprietary patented combination of pamapimod, a highly selective investigational small molecule inhibitor of p38 mitogen-activated protein kinase (p38 MAPK), and pioglitazone, a marketed drug for the treatment of type 2 diabetes. Several p38 MAPK inhibitors were studied by the pharmaceutical industry and largely abandoned after promising but only transient efficacy was observed. Kinarus discovered through its own research that the combination of pamapimod with pioglitazone (i.e. KIN001) produced synergistic efficacy and increased the durability of pamapimod's effects.

KIN001's effects are believed to fight SARS-CoV-2 in three complementary ways: anti-viral effects may prevent viral replication; anti-inflammatory effects may reduce the body's inappropriate inflammatory response (e.g. "cytokine storm"); anti-fibrotic effects may enhance healing of damaged tissues, speeding recovery and reducing the likelihood of "long COVID" symptoms. In contrast to vaccines, antibody, and nucleic acid-based therapies which target viral proteins, KIN001 targets host cell pathways essential for viral replication. This mechanistic difference is less likely to be evaded by future VOCs which result from mutations in SARS-CoV-2 virus.

These newly published data join a growing number of publications that support the role of p38 MAPK in the SARS-CoV-2 lifecycle and the virus-blocking effects of p38 MAPK inhibitors. Because pioglitazone enhances the durability and antiviral effects of the p38 MAPK inhibitor pamapimod, KIN001 may be a more effective treatment than other single agents targeting p38 MAPK.

Separately, Kinarus has disclosed that it received regulatory authorization to initiate Phase 2 testing of KIN001 to treat wet age-related macular degeneration (wAMD). In preclinical testing KIN001 reduced pathological blood vessel growth (neovascularization) in the choroid of the eye in animal models of wet AMD. AMD is the most common cause of visual impairment among elderly patients in developed countries.

In addition, the company is preparing regulatory submissions to start Phase 2 testing of KIN001 to treat idiopathic pulmonary fibrosis (IPF). KIN001 reduced inflammation and tissue fibrosis in animal models of lung disease, supporting its clinical development as an IPF treatment.

KIN001 enjoys broad patent protection in the US, EU, China, and other countries through at least 2037.

Kinarus Therapeutics Holding AG (www.kinarus.com) was founded in 2017 by experienced pharmaceutical executives in Basel, Switzerland. Pamapimod was initially discovered and developed by Roche before Kinarus negotiated the exclusive worldwide license to the molecule and patented its combination with pioglitazone. Kinarus licenses and develops late-stage clinical assets, increasing its probability of clinical and regulatory success and reducing time-to-market.

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