### Press Release



# Shionogi and BioAge conclude a license agreement aimed at treating COVID-19

OSAKA, Japan, January, 26, 2020 - Shionogi & Co., Ltd. (Head Office: Osaka, Japan; President and CEO: Isao Teshirogi, Ph.D. hereafter "Shionogi") today announced that Shionogi has concluded a license agreement with BioAge Labs, Inc. (Head Office: Richmond, California, U.S.A.; CEO: Kristen Fortney, Ph.D., hereafter "BioAge") to grant BioAge exclusive development and marketing rights in the United States and Europe for S-555739 (Prostaglandin D<sub>2</sub> DP1 receptor antagonist, BioAge code: BGE-175) to control the aggravation of COVID-19.

BGE-175 is a DP1 receptor antagonist discovered by Shionogi and had been in development for the treatment of allergic rhinitis. The results of several non-clinical studies and clinical trials in over 2,400 subjects have shown that BGE-175 has high affinity and selectivity to the DP1 receptor and is well tolerated and safe.

It is known that age-related declines in immune function are significant risk factors that increase morbidity and mortality from infectious diseases<sup>2</sup>. Therefore, it has been suggested that restoring immune function may reduce the severity of various infectious diseases, including COVID-19. The DP1 receptor has been identified as a drug discovery target that improves age-related declines in immune function in an original AI-driven analysis of longitudinal omics data in humans conducted by BioAge. In addition, in a study conducted at the University of Iowa by Dr. Stanley Perlman in which an existing DP1 receptor antagonist was administered in an aged mouse model of SARS coronavirus (SARS-CoV) infection, the mortality rate of mice was improved and a significant decrease in viral load in the lungs was observed<sup>3</sup>. Based on these exciting study results, we have concluded a license agreement in expectation of development of this compound as an immunopotentiator for the elderly by drug repositioning.

With this agreement, Shionogi grants BioAge exclusive U.S. and European rights to develop and commercialize BGE-175 for COVID-19 treatment. In addition, Shionogi grants BioAge exclusive rights to negotiate a license for additional indications. Under this agreement, Shionogi will receive an upfront payment and milestones according to future development, as well as royalties on sales if BGE-175 is successfully commercialized. BioAge plans to initiate a Phase 2 trial for treatment of COVID-19 in the first half of 2021.

Shionogi is committed to "protect people worldwide from the threat of infectious diseases" as our key focus. We are not limiting ourselves to the research and development of therapeutics, but are also pursuing total care for infectious diseases, through awareness building, prevention, diagnosis, and addressing exacerbations, as well as the treating the infection itself. As a leading company to fight infectious diseases, in order to contribute to the recovery of social security and safety through the early termination of COVID-19, we are working on the development of new therapeutic drugs and vaccines and maximizing the value of existing compounds. In addition, we will strengthen our efforts, including collaboration with external partners, to provide healthcare solutions to a larger number of patients.

#### **Future Outlook**

The impact of this matter on the consolidated earnings forecast for the fiscal year ending March 31,

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2021 will be limited at this time, but we will promptly announce any future impact on our financial results when recognized.

#### About Shionogi & Co., Ltd.

Shionogi & Co., Ltd. is a major research-driven pharmaceutical company dedicated to bringing benefits to patients based on its corporate philosophy of "supplying the best possible medicine to protect the health and wellbeing of the patients we serve." Shionogi's research and development currently targets two therapeutic areas: infectious diseases, and pain/CNS disorders. For over 50 years, Shionogi has developed and commercialized innovative oral and parenteral anti-infectives. In addition, Shionogi is engaged in new research areas, such as obesity/geriatric metabolic diseases and oncology/immunology. Contributing to the health and QOL of patients around the world through development in these therapeutic areas is Shionogi's primary goal. For more details, please visit www.shionogi.co.jp/en/.

#### About BioAge Labs, Inc.

BioAge is a clinical-stage biotechnology company that develops drugs to treat aging and aging-related diseases. BioAge has built a systems biology platform to map out the key molecular pathways that impact healthy human aging, based on proprietary human aging cohorts that have blood samples collected up to 45 years ago with participant -omics data that is tied to detailed medical follow-up records over their lifespan. To date, BioAge has raised \$127M from Andreessen Horowitz, Kaiser Foundation Hospitals, and others. BioAge's mission is to develop a pipeline of therapeutic assets that increase healthspan and lifespan.

#### Forward Looking Statement

This announcement contains forward-looking statements. These statements are based on expectations in light of the information currently available, assumptions that are subject to risks and uncertainties which could cause actual results to differ materially from these statements. Risks and uncertainties include general domestic and international economic conditions such as general industry and market conditions, and changes of interest rate and currency exchange rate. These risks and uncertainties particularly apply with respect to product-related forward-looking statements. Product risks and uncertainties include, but are not limited to, completion and discontinuation of clinical trials; obtaining regulatory approvals; claims and concerns about product safety and efficacy; technological advances; adverse outcome of important litigation; domestic and foreign healthcare reforms and changes of laws and regulations. Also for existing products, there are manufacturing and marketing risks, which include, but are not limited to, inability to build production capacity to meet demand, unavailability of raw materials and entry of competitive products. The company disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

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#### References

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