

BIOAGE

BioAge Initiates Phase 2 Trial of BGE-175 to Treat COVID-19 by Reversing Immune Aging, a Key Cause of Morbidity and Mortality in Older Patients

BGE-175 prevents lethality in murine models of SARS-CoV-2 viral challenge

Multi-center, randomized, double-blind, placebo-controlled, parallel-group study will evaluate the efficacy and safety of daily oral BGE-175 for up to 14 days

RICHMOND, Calif., March 22, 2021 - BioAge Labs, Inc., a clinical-stage biotechnology company developing medications that target aging to treat severe diseases, today announced that it has commenced a Phase 2 clinical trial of BGE-175, a potent oral inhibitor of prostaglandin D₂ (PGD₂) DP1 signaling with a safety database comprising > 2400 patients, for treating COVID-19 patients aged 60 or older. Top-line results are expected in 2021.

“COVID-19 has devastated elderly populations around the world, largely because the immune system declines with age, making older people much more vulnerable to infection,” said Kristen Fortney, Ph.D., Chief Executive Officer of BioAge. “By reversing age-related dysregulation of critical immune mechanisms, BGE-175 could allow older patients to more effectively fight off COVID-19. Our strongly encouraging preclinical data show that BGE-175 almost completely protects older mice against lethality from infection with SARS-CoV-2, the virus that causes COVID-19. In addition, BGE-175 dramatically decreases viral load in lung tissue, which is correlated with both disease severity and transmission of the virus.”

The preclinical data were obtained in collaboration with coronavirus expert Stanley Perlman, MD, Professor of Microbiology and Immunology at the University of Iowa.

“DP1 signaling becomes dysregulated with aging and adversely affects the immune response of older animals to SARS-CoV-2 and other viral challenges. We have shown that BGE-175 can dramatically improve outcomes in mouse models of COVID-19,” said Dr. Perlman. “Because some of the rapidly spreading variants of SARS-CoV-2 are vaccine-resistant, it is critically important to develop COVID-19 treatments, like BGE-175, that are likely to be equally effective against infections with these more contagious and potentially more lethal strains.”

About the Phase 2 trial

The randomized, placebo-controlled, parallel-group, multicenter, double-blind study will recruit patients ≥ 60 years old hospitalized for COVID-19 who are not yet in respiratory failure. A total of 132 participants will receive daily doses of BGE-175 or placebo (66 in each group) for up to

14 days. The study medication will be administered orally or, in patients who cannot swallow, via nasogastric tube. The trial is being conducted in the US, Argentina, and Brazil.

The primary endpoint is the proportion of patients who die or progress to respiratory failure within 28 days after receiving the first dose of BGE-175. Secondary endpoints include viral load, clinical improvement or worsening, incidence and duration of supplementary oxygen or ventilation, time to discharge or rehospitalization, and intensive care unit (ICU) admission, all over a 57-day period after the first dose. The study will also measure PGD₂ DP1 signaling activity and the levels of inflammatory markers. Full details of the trial are available at [ClinicalTrials.gov](https://clinicaltrials.gov).

Some cases of COVID-19 are associated with uncontrolled inflammation, which increases disease severity and morbidity. Hence, the trial will also measure BGE-175's effect on levels of inflammatory markers, including cytokines, CD4+ and CD8+ T cells, and total lymphocytes. The resultant data will provide insight into BGE-175's ability to restore normal regulation of the immune system.

The drug's mechanism could be useful against diseases beyond COVID-19. "By targeting immune aging directly, BGE-175 has the potential to boost immune cell function while preventing dangerous overreaction." said Paul Rubin, M.D., Chief Medical Officer of BioAge. "PGD₂ DP1 signaling is associated with increased susceptibility to infection and risk of mortality. A correlation between inhibition of PGD₂ DP1 and patient response in this trial would provide evidence that BGE-175 has the potential to reverse age-related decline in immune mechanisms that are critical for host defense against major viral challenges such as COVID-19, SARS, and pandemic influenza."

COVID-19 and aging

Aging is the largest risk factor for COVID-19 morbidity and mortality: people over 80 are hundreds of times more likely to die of the disease than those under 40.¹ Older people are at higher risk in part because the aging immune system becomes less efficient and prone to hyperinflammation. Rejuvenating the immune system by treating age-related deterioration directly could help to lessen the severity of COVID-19 infection and boost protection by vaccines.²

About BGE-175

BGE-175 is a potent, orally administered small-molecule inhibitor of the PGD₂ DP1 pathway, which BioAge's platform identified as a key target for immune aging. DP1 signaling is associated with elevated susceptibility to infection and higher risk of mortality from infectious disease. Inhibition of DP1 affects immune function in multiple ways, activating dendritic and

natural killer (NK) cells while attenuating neutrophil migration. Together, these effects counteract immunosenescence and improve aspects of both adaptive and innate immunity.

Multiple Phase 1–3 clinical trials of BGE-175 for allergic rhinitis, conducted by Shionogi & Co., Ltd., demonstrated that the drug was safe and well-tolerated in more than 2,400 study participants.

About the BioAge Platform

The BioAge platform identifies key drug targets that impact aging. The Company's proprietary human aging cohorts include archived longitudinal blood samples collected up to 50 years ago, with participant -omics data that is tied to extensive medical follow-up records including detailed future healthspan, lifespan, and disease outcomes. BioAge has built a systems biology and AI platform that leverages these rich datasets to generate hypotheses about the determinants of healthy human aging and identify the molecular drivers of age-related pathology. BioAge's pipeline of development candidates targeting these key pathways has the potential to address significant unmet medical needs of the aging population.

About BioAge

BioAge is a biotechnology company that develops proprietary drugs to treat aging and aging-related diseases. Since its founding in 2015, the Company has raised more than \$127 million in venture capital funding from Andreessen Horowitz, Kaiser Foundation Hospitals, Khosla Ventures, Felicis Ventures, and others to back its AI-driven approach of mapping the molecular pathways that impact human longevity. BioAge's mission is to develop a pipeline of therapeutic assets that target aging to treat severe diseases.

References

¹ *Nature* 2020; 584:430–436

² *Nature* 2020; 586:352–354

Source: BioAge Labs, Inc.

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