



Tetra Therapeutics and Shionogi Announce Expanded Alliance

Grand Rapids, MI, March 4, 2020 (Business Wire) – Tetra Therapeutics, a clinical-stage biopharmaceutical company developing novel treatments for patients with cognitive impairment and memory loss, today announced it has entered into an expanded strategic alliance with Shionogi. The two companies will work together to develop and commercialize BPN14770 for the treatment of Alzheimer’s disease, Fragile X syndrome and other indications marked by cognitive and memory deficits.

Under the terms of the expanded alliance, Shionogi has increased its equity investment in the company to 50% and has the option to complete a structured buyout of the remaining equity if certain closing conditions are met based on the topline results of the company’s clinical Phase 2 PICASSO AD trial in patients with early Alzheimer’s disease expected to read out later this month.

Tetra is developing BPN14770 for the treatment of brain disorders marked by cognitive and memory impairment including Alzheimer’s disease and Fragile X syndrome. In addition, Tetra has completed enrollment in a Phase 2 study of BPN14770 in adults with Fragile X syndrome, an indication for which BPN14770 has received Orphan Drug Designation from the U.S. Food and Drug Administration.

“This expanded alliance with Shionogi further validates our platform and the potential for BPN14770 to provide a new treatment option for patients suffering from Alzheimer’s disease,” said Mark Gurney, Ph.D., Chairman and Chief Executive Officer of Tetra Therapeutics. “We are delighted to be expanding our collaboration with Shionogi and thank them for their continued conviction in our mission. We look forward to announcing topline results from our Phase 2 PICASSO AD trial in Alzheimer’s disease later this month.”

“We are pleased to strengthen our strategic alliance with Tetra. With the aging of our society, cognitive disorders are becoming a serious social issue. We believe BPN14770 has the potential to become an innovative new treatment to help solve for this issue. This new collaboration with Tetra reinforces our steadfast commitment to advancing cutting-edge science in central nervous system (CNS) disorders including Alzheimer’s disease,” said Dr. Isao Teshirogi, President and Chief Executive Officer, Shionogi & Co., Ltd.

Cooley LLP, Honigman LLP and Nomura Securities International, Inc., provided advisory services for the transaction.

About BPN14770

BPN14770 is a novel therapeutic agent that selectively inhibits phosphodiesterase-4D (PDE4D) to enhance memory formation in children and older adults. This unique mechanism of action has the potential to improve cognitive and memory function in devastating CNS disorders, including Fragile X syndrome, Alzheimer’s disease and other dementias, learning/developmental disabilities and schizophrenia. Preclinical animal models show that BPN14770 has the potential to promote the maturation of connections between neurons, which is impaired in patients with Fragile X Syndrome, and to protect connections between neurons which otherwise are lost in patients with Alzheimer’s disease. Tetra has

completed Phase 1 double blind, placebo-controlled, dose-ranging studies of the safety and pharmacokinetics of BPN14770 in healthy volunteers. Evidence of cognitive benefit was found in elderly subjects. Tetra is conducting the PICASSO AD trial, a Phase 2 study of BPN14770 in patients with Alzheimer's disease, and an investigational Phase 2 study of BPN14770 in adults with Fragile X syndrome, an indication for which BPN14770 has received Orphan Drug Designation from the U.S. Food and Drug Administration (FDA.)

About Tetra Therapeutics

Tetra Therapeutics is a clinical stage biotechnology company developing a portfolio of therapeutic products that will bring clarity of thought to people suffering from Fragile X syndrome, Alzheimer's disease, traumatic brain injury, and other brain disorders. Tetra uses structure-guided drug design to discover mechanistically novel, allosteric inhibitors of phosphodiesterase 4 (PDE4), an enzyme family that plays key roles in memory formation, learning, neuroinflammation, and traumatic brain injury. Tetra Therapeutics is headquartered in Grand Rapids, Michigan. For more information, please visit the company's website at <http://www.tetratherapeutics.com>.

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/.

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