Commense Advances Microbiome Platform Targeting Early Childhood Health

Founding scientists and advisors named and exclusive worldwide license obtained to prevent and treat disease through microbiome-based interventions in early childhood

Boston, Massachusetts, March 31, 2016 – Commense, focused on preventing and treating disease through microbiome-based interventions in infancy and early childhood, advances its discovery and development platform, names its founding scientists and advisors and executes an exclusive license in the microbiome field.

"A child's early interactions with microbes can play an essential role in health and are believed to impact the later development of serious conditions such as asthma, food allergies, type 1 diabetes and rheumatoid arthritis," said David Steinberg, co-founder of Commense and Executive Vice President at PureTech. "We are pleased to advance our work in the early childhood microbiome with the expansion of our pipeline and the addition of an esteemed group of advisors."

Commense's work builds on the decades of data supporting the "hygiene hypothesis," which suggests that a lack of early childhood exposure to key microbes increases the risk of numerous early childhood diseases common in developed countries. Commense is developing a pipeline of novel therapeutics for the prevention and treatment of disease based on a deep understanding of these human/microbe interactions and their impact on health. Supporting this pipeline is Commense's platform to characterize and design microbiome-based therapeutics to potentially restore these "missing microbes," along with a suite of technologies designed to improve measurement and diagnosis, delivery and microbial colonization.

Exclusive Worldwide License

Commense has obtained an exclusive, worldwide license from New York University on a key building block of its platform, an approach focused on replenishing and bolstering the microbial exposure that a baby experiences at birth during passage through the birth canal. This technology is designed to enable microbial transfer in newborns who may not receive the vaginal microbiome, including those delivered by caesarian section (C-section). The work supporting this technology is from the lab of Commense co-founder and Scientific Advisory Board member Maria Gloria Dominguez-Bello, Ph.D., Associate Professor of Medicine at NYU Langone Medical Center, and was published in the February 1, 2016 issue of *Nature Medicine*.

"Until very recently, every surviving mammal has been delivered through the birth canal. In C-sections, the lack of the protective microbes with which we've co-evolved could be very important for many conditions, including diabetes, asthma, rheumatoid arthritis and Crohn's disease, that we now know involve the microbiome," said Dr. Rob Knight, a coauthor of the *Nature Medicine* study, and a member of Commense's Scientific Advisory Board (SAB).

The study demonstrated that vaginal microbial transfer could be performed to seed newborns delivered by C-section with microbes derived from the mother's birth canal, in a procedure mimicking natural birth. This procedure enhanced the levels of potentially beneficial microbes throughout the 30-day follow-up period. Commense is extending this approach by developing microbial and non-microbial interventions that could benefit millions of children each year worldwide.

"These extremely exciting initial data give promise to the hope that all newborns might receive the potential health advantages of their mothers' beneficial microbes, in a manner reminiscent of the now-established benefits of fecal microbial transfers for *C. difficile* infections," said Dr. Dominguez-Bello. "We've been overwhelmed by the support and positive response to the study by mothers, physicians, and researchers."

Numerous studies have documented associations between C-sections and increased rates of allergies, immune disorders, asthma, autism and obesity. In the United States, about one in three babies is delivered by C-section, and in some countries the rate of C-section exceeds 50 percent.

Founding Scientists and Advisors

Commense was co-founded by PureTech Health ("PureTech," LSE: PRTC) and a group of the world's leading researchers in the field of the human microbiome and its role in infant and maternal health. The founding scientists and advisors include:

- Rob Knight, Ph.D., (SAB Member) – Professor in the Department of Pediatrics and Professor Department of Computer Science and Engineering at the University of California San Diego (UC San Diego); Director of UC San Diego's Center for Microbiome Innovation; co-founder of the Earth Microbiome Project and American Gut; pioneer of key computational and experimental techniques for characterizing and designing complex microbial communities in different ecosystems; author of TED book *Follow Your Gut: The Enormous Impact of Tiny Microbes;*

- Maria Gloria Dominguez-Bello, Ph.D., (Scientific Co-Founder and SAB Member) – Associate Professor of Medicine at NYU Langone Medical Center; lead author of the *Nature Medicine* study and pioneer in characterizing and understanding microbial exposures early in life;

- Martin J. Blaser, M.D., (Scientific Co-Founder and SAB Member) – Professor of Microbiology, NYU Langone Medical Center; Director of the Human Microbiome Program; internationally recognized for his pioneering work in discovering the progressive loss of microbial diversity in the microbiota of people living in developed countries and its effects on health; and author of *Missing Microbes: How the Overuse of Antibiotics Is Fueling Our Modern Plagues*;

- B. Brett Finlay, Ph.D., (Scientific Co-Founder and SAB Member) – Professor of Biochemistry and Molecular Biology at the University of British Columbia; pioneer in understanding how loss of key microbes in children can affect disease, including atopic diseases and allergy; and author of forthcoming book *Let Them Eat Dirt,* which will explore how the microbes that inhabit our bodies influence childhood development;

- Joseph St. Geme III, M.D., (Advisor and SAB Member) – Physician-in-Chief and Chairman of Pediatrics at the Children's Hospital of Philadelphia; Professor of Pediatrics and Microbiology at the Perelman School of Medicine at the University of Pennsylvania; and leading clinician and researcher in the area of pediatric host-bacterial interactions; and

- Sam Kass, (Advisor and Commense Board Member) – former Senior Policy Advisor for Nutrition Policy at the White House and former Executive Director of First Lady Michelle Obama's *Let's Move!* childhood health campaign.

"The more we learn about the microbiome, the more we realize how fundamental it is to human health," said Dr. Blaser. "We believe that one of the most important windows of exposure to beneficial microbes is at birth, so Commense represents a critical step forward for infants and mothers."

About Commense

Commense is pioneering a deep understanding of the microbiome early in life and its fundamental role in promoting a lifetime of health. Drawing insights from natural exposures to beneficial microbes, Commense is developing approaches to guide the priming, seeding, and maintaining of the microbiome in infants and children. Co-founded by PureTech Health ("PureTech," LSE: PRTC) and working with the world's leading microbiome scientists, physicians, and product developers, Commense is developing a novel category of products to address critical unmet needs in pediatric populations.

Forward Looking Statement

This press release contains statements that are or may be forward-looking statements, including statements that relate to the company's future prospects, developments and strategies. The forward-looking statements are based on current expectations and are subject to known and unknown risks and uncertainties that could cause actual results, performance and achievements to differ materially from current expectations, including, but not limited to, those risks and uncertainties described in the risk factors included in the regulatory filings for PureTech Health plc. These forward-looking statements are based on assumptions regarding the present and future business strategies of the company and the environment in which it will operate in the future. Each forward-looking statement speaks only as at the date of this press release. Except as required by law and regulatory requirements, neither the company nor any other party intends to update or revise these forward-looking statements, whether as a result of new information, future events or otherwise.

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