November 30, 2023

Benitec Biopharma Announces First Subject Dosed in Phase 1b/2a Clinical Trial for Gene Therapy Candidate BB-301 for the Treatment of Oculopharyngeal Muscular Dystrophy

Announcement marks the initiation of the first clinical trial conducted in human subjects employing Benitec's "Silence and Replace" DNA-directed RNA interference gene therapy platform

HAYWARD, Calif., Nov. 30, 2023 (GLOBE NEWSWIRE) -- Benitec Biopharma Inc. (NASDAQ: BNTC) ("Benitec" or the "Company"), a clinical-stage, gene therapy-focused, biotechnology company developing novel genetic medicines based on its proprietary "Silence and Replace" DNA-directed RNA interference ("ddRNAi") platform, today announced the first subject has been dosed in the BB-301 Phase 1b/2a Clinical Treatment Study. BB-301 is the Company's first gene therapy candidate employing the Silence and Replace approach and is being developed for the treatment of Oculopharyngeal Muscular Dystrophy-related Dysphagia.

Dosing of the first subject marks the beginning of the 52-week follow-up period designed to facilitate conclusive evaluation of the primary and secondary endpoints of the BB-301 Phase 1b/2a Clinical Treatment Study. Interim safety and efficacy evaluations will be conducted at the end of each 90-day period following the administration of BB-301.

"We are grateful to have the opportunity to begin the clinical evaluation of BB-301 and encouraged by the research and development progress made to date. We are deeply appreciative of the unwavering dedication of the clinical research team at our U.S. clinical trial site, our clinical and scientific research advisors in France, and our specialist speech language pathology research advisors in Canada, all of whom have guided the evolution of our understanding of the natural history of OPMD and our implementation of the ideal processes and procedures to facilitate the conduct of the initial clinical evaluation of BB-301," said Jerel A. Banks, M.D., Ph.D., Executive Chairman and Chief Executive Officer of Benitec. "Today we have taken a critical step towards the clinical validation of our Silence and Replace-based approach to the management of genetically defined disorders, and our central goals remain focused on the improvement of the lives of patients suffering from OPMD."

Oculopharyngeal Muscular Dystrophy (OPMD) is a chronic, life-threatening genetic disorder affecting approximately 15,000 patients in the United States, Canada, Western Europe, and

Israel. OPMD patients lose the ability to swallow liquids and solids, resulting in chronic malnutrition, aspiration, and fatal episodes of aspiration pneumonia. Currently, there are no therapeutic agents approved for the treatment of OPMD.

Subjects enrolled in Benitec's ongoing OPMD Natural History (NH) study will become eligible to roll over into the BB-301 Phase 1b/2a Clinical Treatment Study for the treatment of OPMD-related dysphagia after 6 months of baseline data collection. Following a 1-day dosing procedure for BB-301, each study subject will be evaluated for the same radiographic and clinical outcome measures as were evaluated during the NH study, including quantitative radiographic swallowing studies to facilitate objective assessments of swallowing safety, swallowing efficiency, and functional performance of the pharyngeal constrictor muscles underlying the OPMD-related dysphagia. Currently, there are 19 subjects enrolled into the NH study at the U.S. clinical trial site, with each subject having the potential to roll over into the BB-301 Phase 1b/2a Clinical Treatment Study. Interim safety and efficacy data are expected to become available from the BB-301 Phase 1b/2a Clinical Treatment Study in mid-2024.

About BB-301

BB-301 is a novel, modified AAV9 capsid expressing a unique, single bifunctional construct promoting co-expression of both codon-optimized Poly-A Binding Protein Nuclear-1 (PABPN1) and two small inhibitory RNAs (siRNAs) against mutant PABPN1. The two siRNAs are modeled into microRNA backbones to silence expression of faulty mutant PABPN1, while allowing expression of the codon-optimized PABPN1 to replace the mutant with a functional version of the protein. We believe BB-301's silence and replace mechanism is uniquely positioned for the treatment of OPMD by halting mutant expression while providing a functional replacement protein.

About Benitec Biopharma Inc.

Benitec Biopharma Inc. ("Benitec" or the "Company") is a clinical-stage biotechnology company focused on the advancement of novel genetic medicines headquartered in Hayward, California. The proprietary DNA-directed RNA interference "Silence and Replace" platform combines RNA interference, or RNAi, with gene therapy to create medicines that simultaneously facilitate sustained silencing of disease-causing genes and concomitant delivery of wildtype replacement genes following a single administration of the therapeutic construct. The Company is developing Silence and Replace-based therapeutics for chronic and life-threatening human conditions including Oculopharyngeal Muscular Dystrophy (OPMD). A comprehensive overview of the Company can be found on Benitec's website at www.benitec.com.

Forward Looking Statements

Except for the historical information set forth herein, the matters set forth in this press release include forward-looking statements, including statements regarding Benitec's plans to develop and commercialize its product candidates, the timing of the initiation and completion of pre-clinical and clinical trials, the timing of patient enrolment and dosing in clinical trials, the timing of expected regulatory filings, the clinical utility and potential attributes and benefits of ddRNAi and Benitec's product candidates, potential future out-licenses and collaborations, the intellectual property position and the ability to procure

additional sources of financing, and other forward-looking statements.

These forward-looking statements are based on the Company's current expectations and subject to risks and uncertainties that may cause actual results to differ materially, including unanticipated developments in and risks related to: unanticipated delays; further research and development and the results of clinical trials possibly being unsuccessful or insufficient to meet applicable regulatory standards or warrant continued development; the ability to enroll sufficient numbers of subjects in clinical trials; determinations made by the FDA and other governmental authorities; the Company's ability to protect and enforce its patents and other intellectual property rights; the Company's dependence on its relationships with its collaboration partners and other third parties; the efficacy or safety of the Company's products and the products of the Company's collaboration partners; the acceptance of the Company's products and the products of the Company's collaboration partners in the marketplace; market competition; sales, marketing, manufacturing and distribution requirements; greater than expected expenses; expenses relating to litigation or strategic activities; the Company's ability to satisfy its capital needs through increasing its revenue and obtaining additional financing, given market conditions and other factors, including our capital structure; our ability to continue as a going concern; the length of time over which the Company expects its cash and cash equivalents to be sufficient to execute on its business plan; the impact of the COVID-19 pandemic, the disease caused by the SARS-CoV-2 virus, and similar events, which may adversely impact the Company's business and pre-clinical and future clinical trials; the impact of local, regional, and national and international economic conditions and events; and other risks detailed from time to time in the Company's reports filed with the Securities and Exchange Commission. The Company disclaims any intent or obligation to update these forward-looking statements.

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Source: Benitec Biopharma Inc.