September 8, 2021

Benitec Biopharma Provides Positive Regulatory Updates for the BB-301 Development Program; BB-301 Phase 1b/2a Clinical Trial to Begin in 2022

HAYWARD, Calif., Sept. 8, 2021 /PRNewswire/ --

Regulatory Update Highlights:

Regarding European Regulatory Interactions:

- The BB-301 Pilot Dosing Study was viewed as an appropriate dose range finding study
- The design of the ongoing GLP Biodistribution and Toxicology study was viewed as appropriate to support Phase 1b/2a testing of BB-301
- The design of the Phase 1b/2a clinical trial can support the evaluation of BB-301 safety and clinical efficacy in key populations of OPMD patients

Regarding U.S. Regulatory Interactions:

- Benitec has been granted a Type C meeting with the U.S. Food and Drug Administration ("FDA") in the fourth quarter of 2021

Benitec Biopharma Inc. (NASDAQ: BNTC), a development-stage biotechnology company focused on the advancement of novel genetic medicines, today announced significant progress regarding the regulatory interactions in Europe required to support advancement of the BB-301 development program towards the Phase 1b/2a clinical study in 2022. Benitec also confirmed the scheduling of an upcoming regulatory interaction with the Food and Drug Administration in the United States.

BB-301 is a novel investigational gene therapy under development for the treatment of patients with Oculopharyngeal Muscular Dystrophy (OPMD). OPMD is a chronic, life-threatening genetic disorder affecting approximately 15,000 patients in the United States, Canada, Western Europe, and Israel. OPMD is caused by a mutation in the gene encoding poly(A) binding protein nuclear 1 (PABPN1). Patients with OPMD lose the ability to swallow

liquids and solids, and the natural history of the disorder is characterized by chronic malnutrition, aspiration, and fatal episodes of aspiration pneumonia. Currently, no therapeutic agents are approved for the treatment of OPMD. Additionally, no surgical interventions capable of altering the long-term natural history of OPMD are available.

Benitec has previously disclosed key data-points related to the completed non-clinical studies and the planned non-clinical studies for BB-301 that were anticipated to support the filing of Clinical Trial Applications in Europe and in Canada and, similarly, to facilitate the filing of an Investigational New Drug Application in the United States. In addition to the non-clinical proof-of-concept studies carried out in murine models of OPMD (Strings-Ufombah, V., et al., Molecular Therapy: Nucleic Acids, 2021; Malerba, A., et al. Nature Communications, 2017), Benitec recently completed a BB-301 Pilot Dosing Study in large animals (Beagle dogs). The BB-301 Pilot Dosing Study yielded favorable interim data related to BB-301 target tissue transduction, gene expression, and target protein knock-down, all of which were disclosed in February 2021 via press release and presentation. Additionally, Benitec initiated a 12-week GLP Biodistribution and Toxicology Study for BB-301 in Beagle dogs during the first half of 2021.

Following the disclosure of the positive BB-301 Pilot Dosing Study data, Benitec completed a Scientific Advice meeting with The National Agency for the Safety of Medicines and Health Products in France (L'Agence nationale de sécurité du médicament et des produits de santé or "ANSM") in the first half of 2021.

The Scientific Advice meeting was conducted to review and confirm the adequacy of:

- The non-clinical data derived from the evaluation of BB-301 in both the murine proof-of concept studies and the Pilot Dosing study in Beagle dogs
- The experimental, analytical, and statistical methods comprising the 12-week BB-301 GLP Biodistribution and Toxicology study in Beagle dogs
- The large-scale manufacturing plan for clinical grade BB-301 drug product for use in the Phase 1b/2a clinical study in OPMD patients
- The design of the Phase 1b/2a clinical study slated for initiation in 2022

The BB-301 Pilot Dosing Study was viewed as an appropriate dose range finding study. The preliminary data derived from the Pilot Dosing Study regarding BB-301 pharyngeal muscle tissue transduction, BB-301 transgene expression, and the resulting knock-down of wild type PABPN1 (*further details in February 2021 Presentation*) supported the adequacy of the data derived from this study to inform the choice of BB-301 doses for use in the GLP Biodistribution and Toxicology Study. The design of the GLP Biodistribution and Toxicology study was viewed as appropriate to support first-in-human testing of BB-301. Pending the final results of the ongoing GLP Biodistribution and Toxicology study, the BB-301 Pilot Dosing Study data and the murine proof-of-concept study data (referenced above) are sufficient to inform the choice of the BB-301 drug doses employed in the upcoming Phase 1b/2a study. As BB-301 drug product has been reproducibly manufactured at large-scale in the past, the manufacturing plan for clinical grade BB-301 drug product can be conducted under GMP conditions with a production process analogous to that that employed in prior large-scale production runs. Finally, the design of the Phase 1b/2a clinical trial can support the evaluation of BB-301 safety and clinical efficacy in key populations of OPMD patients.

Benitec will provide an overview of the design of the BB-301 Phase 1b/2a clinical trial in an

upcoming press release.

Regarding our regulatory interactions with the FDA, Benitec has been granted a Type C meeting in the fourth quarter of 2021.

The proprietary DNA-directed RNA interference (ddRNAi) platform employed by Benitec combines RNA interference (RNAi) with classical AAV-based gene therapy. Through the use of the ddRNAi platform Benitec's goal is to create genetic medicines that, following a single administration, will enable target tissues to perpetually produce siRNA molecules which facilitate the sustained silencing of disease-causing genes. Importantly, the ddRNAi platform also allows for concomitant delivery of wild type replacement genes, and these distinct genetic elements work in concert to silence the expression of disease-causing mutant genes and to simultaneously replace the mutant genes with normal (wild type) genes to restore the natural underlying physiology of the diseased tissues. BB-301, the most advanced genetic medicine currently under development by Benitec, employs the proprietary platform, which allows for a "Silence and Replace" approach to the treatment of OPMD.

BB-301 has received Orphan Drug Designation in the United States and the European Union. While OPMD is a rare disorder, the commercial opportunity for a safe and efficacious therapeutic agent in this indication exceeds $1 billion over the course of the commercial life of the product.

About Benitec Biopharma, Inc.

Benitec Biopharma, Inc. ("Benitec" or the "Company") is a development-stage biotechnology company focused on the advancement of novel genetic medicines with its headquarters in Hayward, California. The proprietary platform, called DNA-directed RNA interference, or ddRNAi, combines RNA interference, or RNAi, with gene therapy to create medicines that facilitate sustained silencing of disease-causing genes following a single administration. The Company is developing ddRNAi-based therapeutics for chronic and life-threatening human conditions including Oculopharyngeal Muscular Dystrophy (OPMD), and Chronic Hepatitis B. 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 represent forward-looking statements, including statements regarding BB-301, Benitec's plans to develop and commercialize its product candidates, the timing of the initiation and completion of preclinical 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. In addition, preliminary results or other preliminary analyses do not in any way ensure that later or final results in a clinical trial or in similar clinical trials will replicate those interim results.

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 Some of the risks and uncertainties that may cause our actual results, performance or achievements

to differ materially from those expressed or implied by forward-looking statements include the following:

- the success of our plans to develop and potentially commercialize our product candidates; the timing of the initiation and completion of preclinical studies and clinical trials;
- the timing and sufficiency of patient enrollment and dosing in any future clinical trials;
- the timing of the availability of data from clinical trials;
- the timing and outcome of regulatory filings and approvals;
- unanticipated delays;
- sales, marketing, manufacturing and distribution requirements;
- market competition and the acceptance of our products in the marketplace;
- regulatory developments in the United States;
- the development of novel AAV vectors;
- the plans of licensees of our technology;
- the clinical utility and potential attributes and benefits of ddRNAi and our product candidates;
- including the potential duration of treatment effects and the potential for a "one shot" cure;
- our dependence on our relationships with collaborators and other third parties;
- expenses, ongoing losses, future revenue, capital needs and needs for additional financing;
- the length of time over which we expect our cash and cash equivalents to be sufficient to execute on our business plan;
- our intellectual property position and the duration of our patent portfolio;
- the impact of local, regional, and national and international economic conditions and events; and
- the impact of the current COVID-19 pandemic, the disease caused by the SARS-CoV-2 virus, which may adversely impact our business and preclinical and future clinical trials;

as well as other risks detailed under the caption "Risk Factors" in our reports filed with the SEC from time to time. Any forward-looking statements in this release speak only as of the date on which it was made. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

Media & Investor Relations Contact:
Jay A. Morakis
CEO of M Group Strategic Communications (for Benitec Biopharma, Inc.)
Phone: 646-859-5951
Email: jmorakis@mgroupsc.com

View original content to download multimedia: https://www.prnewswire.com/news-releases/benitec-biopharma-provides-positive-regulatory-updates-for-the-bb-301-development-program-bb-301-phase-1b2a-clinical-trial-to-begin-in-2022-301371157.html

SOURCE Benitec Biopharma Inc.