ASX ANNOUNCEMENT

Benitec announces results from Phase I/IIa clinical study of TT-034

- **Primary study endpoint of safety met**
- **Transduction of hepatic tissue seen but no reduction in viral load**
- **Valuable learnings from this study incorporated into other programs**

Sydney, Australia, 16 September 2016: Benitec Biopharma Limited (ASX:BLT; NASDAQ: BNTC; NASDAQ: BNTCW) announces that its phase I/IIa clinical study for TT-034 has met its 24–week primary endpoint, based on safety within liver and other organs. This outcome demonstrates that TT-034 was well tolerated and had a favorable safety profile in subjects chronically infected with the hepatitis C virus (HCV). While transduction of hepatic tissues was seen, there was no significant decrease in viral load in treated patients, which was a secondary endpoint of the study.

Designed to treat HCV, TT-034 is an RNAi therapeutic comprised of a recombinant DNA that is delivered intravenously and uses an Adeno-Associated Virus capsid (AAV8) for transduction of hepatocytes. Once inside the cell, TT-034 uses the cell's transcriptional machinery to drive long-term expression of three independent short hairpin RNAs (shRNA) to simultaneously target three well-conserved regions of the HCV RNA genome.

This phase I/IIa clinical study for TT-034 enrolled nine patients who received a single intravenous infusion of TT-034 at escalating doses of 4 x 10^{10}, 1.25×10^{11}, 4×10^{11} and 1.25×10^{12} vg/kg. Patients were monitored for safety and efficacy assessments over 24 weeks following the administration of TT-034. A liver biopsy, collected 21 days post dosing, was used to assess hepatic TT-034 DNA levels and shRNA expression.

Georgina Kilfoil, Chief Clinical and Development Operations Officer for Benitec, said: "This was the first time that non-withdrawable RNAi was introduced directly into humans, with the goal of having a new therapeutic modality irreversibly transduce nearly all, if not all, of the patient's hepatocytes. Achieving this goal is quite an accomplishment in itself, but to have a clean safety profile is a significant achievement given that these patients have a chronic liver disease and compromised liver function. In addition, the trial has provided invaluable data on the development of our ddRNAi therapeutics as well as helped define the regulatory pathway that successor drugs will need to adhere to for entry into the clinic."

In total, eight males and one female infected with genotype 1 HCV were enrolled into the study with their diagnosis of chronic disease ranging from two to twenty-one years. Those enrolled included patients that were treatment naïve, as well as those that were treatment failures on standard of care hepatitis C medications. The age of patients ranged from 27 to 64 years.

TT-034 was shown to be very well tolerated with no related serious adverse events observed. In the nine patients dosed, there was only one serious adverse event; a pulmonary embolism that was the result of a fall and was classified as unrelated to therapy. The event resolved within four weeks. There were only three adverse events (diarrhoea, light-headedness and bradycardia) considered possibly related to study drug and all were mild in nature and resolved completely. No adverse events met the pre-defined criteria

for a dose-limiting toxicity. In addition, no T-cell capsid response was seen in any of the subjects, as has been previously reported at similar high dose levels in other systemic trials with AAV. The patients dosed with TT-034 will be followed in a pre-planned follow-up study where they will have annual health checks for 4 and a half years after coming off study.

Dr. David Suhy, Chief Scientific Officer for Benitec said: "We are obviously disappointed that we did not see a reduction in viral burden as a result of TT-034 administration. Although we will complete a more detailed assessment of the data, it is likely that TT-034 produced insufficient levels of the anti-HCV shRNA. Several years ago, we published a paper in which we made genetic changes into the TT-034 construct to down-regulate expression levels of shRNA in order to avoid toxicity at exceptionally high doses in animal models. While it is possible that the reduction in shRNA levels was further exacerbated when TT-034 was administered to human subjects, it is important to note that we have already used these learnings from this clinical study to make design modifications to other programs. In particular we have made a series of changes to generate more potent triggers of RNAi as well as modify the constructs to significantly enhance shRNA expression levels. As one example, the design of BB-103 for the HBV program, used several new approaches to significantly enhance the level of shRNA expression while still maintaining a safe profile."

In February of this year, Benitec's Board made the decision to discontinue the hepatitis C program following a review of the commercial opportunities for TT-034. The Board concluded that the hepatitis C program did not offer the commercial value necessary to attract a worthwhile partnership deal and, as a result, did not warrant additional expenditure or focus of company resources beyond completion of patients in Cohort 4. The Company expects to publish the full set of the results in a peer-reviewed journal.

Dr. David Suhy said: "There are many positive outcomes of the study that not only have a significant impact on Benitec's other therapeutic programs , but also for the field of gene therapy as a whole. For instance, one of the most important aspects of this study was that this was the first time DNA transduction and transgene expression could be measured directly in hepatic tissues following systemic administration and the variability that may occur as a result. Yet, the most important lessons are to implement design changes on our clinical constructs and to ensure that our other therapeutics programs benefit from this study."

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About Benitec Biopharma Limited:
Benitec Biopharma Limited (ASX: BLT; NASDAQ: BNTC; NASDAQ: BNTCW) is a biotechnology company developing innovative therapeutics based on its patented gene-silencing technology called ddRNAi or 'expressed RNAi'. Based in Sydney, Australia with laboratories in Hayward, California (USA), and collaborators and licensees around the world, the company is developing ddRNAi-based therapeutics for chronic and life-threatening human conditions including hepatitis B, wet age-related macular degeneration and OPMD. Benitec has also licensed ddRNAi to other biopharmaceutical companies for applications including HIV/AIDS, Huntington's Disease, chronic neuropathic pain and retinitis pigmentosa.

Safe Harbor Statement:
This press release contains "forward-looking statements" within the meaning of section 27A of the US Securities Act of 1933 and section 21E of the US Securities Exchange Act of 1934. Any forward-looking statements that may be in the press release are subject to risks and uncertainties relating to the difficulties in 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. Accordingly, you should not rely on those forward-looking statements as a prediction of actual future results.