

September 24, 2020

The Manager, Listing Department  
The National Stock Exchange of India Ltd.  
Exchange Plaza, Bandra Kurla Complex,  
Bandra (E), Mumbai – 400 051  
NSE Symbol : PANACEABIO

BSE Limited  
Corporate Relationship Department,  
PhirozeJeejeebhoy Towers,  
Dalal Street, Mumbai – 400 001  
BSE Scrip Code: 531349

**Re.: Press Release - Successful completion of Phase I/II study of its novel, Tetravalent recombinant chimeric Dengue candidate vaccine, DengiAll**

Dear Sir,

Panacea Biotec Ltd. (“PBL”) is delighted to announce the successful completion of its Phase I/II study to evaluate the safety and immunogenicity of its vaccine, DengiAll, a single-dose live-attenuated tetravalent vaccine.

A copy of the Press Release titled “**Panacea Biotec announces successful completion of Phase I/II study of its novel, Tetravalent recombinant chimeric Dengue candidate vaccine, DengiAll**” being issued to the media, etc. in this regard is enclosed for your kind reference and record please.

Kindly acknowledge the receipt.

Thanking you,

Sincerely yours,

for **Panacea Biotec Ltd.**



**Devender Gupta**  
**Chief Financial Officer and Head IT**

Encl. As Above

**Panacea Biotec Ltd.**

CIN: L33117PB1984PLC022350

Registered Office: Ambala-Chandigarh Highway, Lalru - 140 501, Punjab, India. Ph.: +91-1762-505900, Fax: +91-1762-505906.  
e-mail: corporate@panaceabiotec.com website: www.panaceabiotec.com

Press Release: September 24, 2020 | New Delhi, India

**Panacea Biotec announces successful completion of Phase I/II study of its novel, Tetravalent recombinant chimeric Dengue candidate vaccine, DengiAll**



- DengiAll induced robust, balanced neutralizing antibody responses against all the four Dengue virus serotypes.
- DengiAll has been found to be safe and well-tolerated with no serious adverse effects
- After a single-dose, more than 80% of the participants showed more than a Tri-valent response and ~95% showed a multivalent response

Panacea Biotec is excited to announce successful completion of its Phase I/II study to evaluate the safety and immunogenicity of its vaccine, **DengiAll**, a single-dose live-attenuated tetravalent vaccine.

According to the World Health Organization, Dengue represents one of the ten biggest global health threats, and it is critical that we have access to a safe and effective vaccine candidate that can reduce the devastating impact of Dengue fever in endemic regions.

Speaking on the occasion, **Dr. Rajesh Jain, Managing Director**, said “DengiAll’s Phase I/II study results are even more important in the context of the Covid-19 pandemic. Co-infection of Dengue and Covid-19 in a Dengue endemic India may complicate approach to treatment and strain healthcare infrastructure. Panacea Biotec has already approached the DGCI to seek accelerated review of its data to bring DengiAll to market quickly and reduce burden on our healthcare infrastructure.”

**Dr. Lalitendu Mohanty, Head of Clinical Research**, said, “Dengue fever’s unique characteristics make vaccine development tricky and an ideal Dengue vaccine must be safe and offer balanced and robust immune response against all four Dengue serotypes. This is where, we believe that DengiAll has shown promising results. I would like to thank virologist **Dr. Steven Whitehead and the team at the National Institute of Allergy and Infectious Disease, US** and infectious disease specialist **Dr. Anna Durbin at the John Hopkins School of Public Health** for their continued and unfettered support in this journey to bring DengiAll to market.”

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**Mr. Devender Gupta, Chief Financial Officer**, said, “We would like to thank Technology Development Board, Ministry of Science and Technology for supporting Panacea Biotec through financial and technical resources to make DengiAll’s Phase I/II Clinical Trials a success.”

DengiAll has illustrated the strength of Panacea Biotec’s expertise in vaccinology, research, development, and manufacturing while leveraging NIH’s ability to work on complex biological challenges to develop breakthrough technologies. Panacea Biotec through continued support from National Institutes of Health, Technology Development Board, and other stakeholders is in a better position to increase affordable access to DengiAll to fight Dengue, a disease that has eluded mankind for generations. With more than 3.9 billion people living in Dengue endemic areas and over 390 million infections per year, DengiAll targets a global market of over \$3 billion.

#### **About Dengue**

Dengue is the fastest spreading mosquito-borne viral disease and is one of the World Health Organization’s top 10 threats to global health in 2019.<sup>1,2</sup> Dengue is mainly spread by *Aedes aegypti* mosquitoes and, to a lesser extent, *Aedes albopictus* mosquitoes. It is caused by any of four Dengue virus serotypes, each of which can cause Dengue fever or severe Dengue.<sup>2</sup> The prevalence of individual serotypes varies across different geographies, countries, regions, seasons and over time.<sup>2,3</sup> Recovery from infection by one serotype provides immunity against only that serotype, and later exposure to any of the remaining serotypes is associated with an increased risk of severe disease.<sup>2</sup>

Dengue is pandemic prone, and outbreaks are observed in tropical and sub-tropical areas and have recently caused outbreaks in parts of the continental U.S. and Europe.<sup>1,2,4</sup> Approximately half of the world now lives under the threat of Dengue, which is estimated to cause 390 million infections and more than 20,000 deaths globally each year.<sup>1,5</sup> The Dengue virus can infect people of all ages and is a leading cause of serious illness among children in some countries in Latin America and Asia.<sup>1</sup>



<sup>1</sup> World Health Organization. Factsheet. [Dengue and Severe Dengue](#). April 2019. Retrieved September 2020.

<sup>2</sup> World Health Organization. [Ten threats to global health in 2019](#). 2019. Retrieved September 2020.

<sup>3</sup> GuzmanMG et al. [Dengue: a continuing global threat](#). *Nature Reviews Microbiology*. 2010;8:S7-S16. Retrieved September 2020.

<sup>4</sup> Chan E, et al. [Using Web Search Query Data to Monitor Dengue Epidemics: A New Model for Neglected Tropical Disease Surveillance](#). *PLoS Negl Trop Dis*. 2011;5:e1206. Retrieved September 2020.

<sup>5</sup> World Health Organization. Factsheet. [Dengue](#). 2019. Retrieved September 2020.

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### **Panacea Biotec's Commitment to Vaccines**

Vaccines prevent 2 to 3 million deaths each year and have transformed global public health.<sup>6</sup> For the past 30 years, Panacea Biotec has supplied vaccines to protect the health of people across the world; it has a strong track-record of supplying more than 10 billion doses of Polio vaccines and over 150 million doses of Innovative fully-liquid Vaccines to National Governments, UN Agencies, etc. Panacea Biotec's global vaccine business is applying innovation to tackle some of the world's most challenging infectious diseases, such as Dengue. Our team brings an outstanding track record and a wealth of knowledge in vaccine development, manufacturing and global access to advance a pipeline of vaccines to address some of the world's most pressing public health needs.

### **About Panacea Biotec**

Panacea Biotec is an innovation-led biopharmaceutical group that focuses on discovery, development, and commercialisation of prescription medicines primarily, focusing on Vaccines, Diabetes, Transplant, Gastroenterology, and Oncology. Its vaccine manufacturing facilities are WHO Prequalified, pharmaceutical and sterile injectable facilities are US FDA approved and all facilities are cGMP compliant. Panacea Biotec launched the world's first fully-liquid Hexavalent vaccine (DTwP-Hib-HepB-IPV), EasySix in 2017. It is also undertaking developing Pneumococcal Conjugate vaccine among other differentiated drug development programs. Panacea Biotec remains focused on merging cutting-edge science and technology with an unwavering commitment towards unmet medical needs with affordability.

For more information, visit: [www.panaceabiotec.com](http://www.panaceabiotec.com)

#### **Panacea Biotec: For Investors**

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#### **Panacea Biotec: For Media**

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<sup>6</sup> UNICEF. [Vaccination and Immunization Statistics](#). 2019. Retrieved September 2020.

#### **Panacea Biotec Ltd.**