

October 22, 2018

Mitsubishi Tanabe Pharma Corporation  
Pharma Foods International Corporation

## **Strategic Research Collaboration for the Development of Innovative Antibody Drug to Treat Autoimmune Diseases**

Mitsubishi Tanabe Pharma Corporation (Head Office: Osaka; President & Representative Director: Masayuki Mitsuka, “MTPC”) and Pharma Foods International Corporation (Head Office: Kyoto; President & Representative Director: Mujo Kim, “PFI”) announced that we have entered into a strategic research collaboration for the development of the innovative antibody drug to treat autoimmune diseases in October 22, 2018.

MTPC has been focusing on autoimmune diseases as a priority area, and made significant efforts to contribute to the treatment for patients who are suffering from autoimmune intractable diseases through providing drugs such as REMICADE<sup>®</sup>, SIMPONI<sup>®</sup> etc. Furthermore, MTPC has been challenging to create innovative drugs for autoimmune and inflammatory diseases through the investigation of the etiology of diseases and applying these data to the next generation of drug discovery.

PFI has a proprietary technology on avian-derived monoclonal antibody (mAb) for antibody production, “ALAgene<sup>®\*</sup>”, which enables PFI to create therapeutic antibodies against drug targets as antigens to be difficult to get mAb by the conventional antibody technologies. Thus, PFI recently created mAb candidates for therapeutic antibody against an innovative drug target to treat various autoimmune diseases.

MTPC and PFI will work collaboratively to improve the profile of prototype mAbs which PFI originally discovered, and then MTPC will be responsible for conducting the pharmacological efficacy study in animal experiment models to identify the clinical candidate. MTPC will provide upfront and research payment, up to ¥250 million to PFI. MTPC and PFI will additionally enter into the royalty bearing exclusive licensing agreement which prescribe right on manufacture, development and commercialize of the licensed product in the world wide.

In addition, MTPC will provide milestone payment at each clinical development stages and achievement reward to PFI.

Further, PFI is currently under extensive investigation for the potential impact of this contract on PFI's consolidated business results at the fiscal year of July 2019. In case that this contract will have a great impact on PFI's consolidated business results, PFI will promptly disclose about additional guidance.

MTPC and PFI will continue challenging to contribute to the patients' health around the world through creating innovative antibody drugs that address unmet medical needs.

### **Mitsubishi Tanabe Pharma Corporation**

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### **<Reference >**

#### **\* About ALAgene® Technology**

Drug targets as physiological proteins, which has been evolutionally conserved among mammalian species, have a high homology of amino acid sequence among mammalian species, leading to be difficult to get monoclonal antibodies through the conventional antibody technologies. On the other hand, such drug targets as physiological proteins have not so high homology of amino acid sequence between avian and mammals including human. Thus, the avian-derived antibody technology of ALAgene® enable to get monoclonal antibodies against the antigens as drug targets. Advantageous points of the ALAgene® technology to the conventional antibody technologies: (1) Diversity of monoclonal antibody libraries by chicken immune system, (2) Humanization of chimeric antibody by simple CDR-grafting, (3) In vitro & in vivo studies with chicken-derived monoclonal antibody cross reactive among human, monkey and rodents to validate the pharmacology efficacy and safety.

#### **About Mitsubishi Tanabe Pharma Corporation**

Mitsubishi Tanabe Pharma Corporation, which was founded in 1678, has its headquarters in Doshomachi, Osaka, which is the birthplace of Japan's Pharmaceutical Industry. With business centered on ethical pharmaceuticals, Mitsubishi Tanabe Pharma is a well-

established company and has the longest history of any listed company in Japan. In accordance with the corporate philosophy of “contributing healthier lives of people around the world through the creation of pharmaceuticals”, the Company formulated the key concept of Open Up the Future under the Medium-Term Management Plan in 2016-2020. Through the discovery of drugs that address unmet medical needs, centered on its priority disease area – autoimmune disease, diabetes and kidney diseases, central nervous system diseases, and vaccine - Mitsubishi Tanabe Pharma will strive to contribute to the health of patients around the world. <https://www.mt-pharma.co.jp/>

### **About Pharma Foods International Corporation**

Pharma Foods International (PFI) is a biotech company founded in 1997, and its headquarter is in Kyoto. PFI has been aiming for research, development and marketing of functional food ingredient, healthcare products, and biopharmaceutical drugs. PFI is focusing on biomedical discovery of antibody & peptide drugs and diagnostics, based on PFI’s proprietary “Avian Lead Antibody Gene” (ALAgene®) technology. PFI will strive to contribute to the patients’ health around the world through creation of innovative biological drugs to treat intractable diseases such as autoimmune diseases, malignant cancers, and bone-joint diseases.

<https://www.pharmafoods.co.jp>