Novel Anti-PD-1 Mimotope Vaccine Ready for Development

- **Paradigm shift in treatment utilises a patient's B cells to produce antibodies against regulatory check-point targets**
- **Vaccine mimics check-point inhibitors – a multi billion-dollar drug class**
- **Broad platform patent filed to protect method of treatment**

MELBOURNE Australia 12 February, 2018: Imugene Limited (ASX: IMU), a clinical-stage immuno-oncology company, announces completion of early development of a new mimotope vaccine that will target and compete in the billion-dollar blockbuster anti-PD-1 immuno-oncology market. This announcement follows 18 months of intensive research conducted in partnership with the Medical University of Vienna.

A mimotope induces an antibody reaction against a target, in this case, a regulatory immune check-point known as PD-1. Mimotope induced antibodies may have advantages over synthetic antibodies including, safety, longer responses, memory and cost.

The check-point inhibitor market is dominated by two monoclonal antibody drugs, Opdivo® (marketed by BMS) and Keytruda® (marketed by Merck). Sales reported for Opdivo and Keytruda in 2017 were USD4.95b and USD3.81b respectively with double digit annual growth. Both drugs target PD-1, a key switch of the immune system's ability to find and eliminate cancerous cells.

The ground-breaking research from Vienna, conducted under the leadership of Imugene's CSO Professor Dr Ursula Wiedermann, has identified mimotope peptides that when incorporated into Imugene's proprietary immunotherapeutic vaccine delivery platform, generate antibodies that bind to the PD-1 biomarker. PD-1 antibodies block a protective mechanism on cancer cells, and allow the immune system to destroy those cancer cells.

The concept of teaching and inducing the body to generate its own antibodies against PD-1 expressing cells represents a paradigm shift in immuno-oncology, and is the first report of treating cancer by this method.

A new method of treatment patent (Australian Patent Office: 2018900368) has been filed to provide protection across a broad landscape of possible immunotherapies, including their combination with cancer vaccines such as HER-Vaxx. Imugene will now commence a preclinical development program which will test the vaccine for both efficacy and safety. This program will be intensive yet systematic to yield a clinical-ready vaccine candidate.

Professor Dr Ursula Wiedermann and Imugene CEO Leslie Chong said in a joint announcement "Development of this new immunotherapy has positioned Imugene to be a new and competitive player in the immuno-oncology revolution in cancer therapy. This expands our pipeline and transforms Imugene into a multi-asset biopharmaceutical company."

Leslie Chong added "On announcing our mimotope program in January 2016 we were cautious given the early stage of the research. However, the progress made by the entire team raises the anticipation that a paradigm shift in cancer treatment is in play."

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About Imugene (ASX:IMU)

Imugene (ASX:IMU) is a clinical stage immuno-oncology company headquartered in Melbourne, Australia. Its lead product is HER-Vaxx, a B Cell peptide vaccine for the treatment of gastric cancer. The company is also developing mimotope-based immunotherapies against validated and new oncology targets.

HER-Vaxx is a cancer immunotherapy designed to treat tumours that over-express the HER-2/neu receptor, such as gastric, breast, ovarian, lung and pancreatic cancers. Developed by leading scientists at the Medical University of Vienna in Austria, the peptide vaccine is constructed from several B cell epitopes of HER-2/neu. It has been shown in pre-clinical studies and in one Phase I study to stimulate a potent polyclonal antibody response to HER-2/neu, a well-known and validated cancer target.

Imugene in partnership with the Medical University of Vienna is working to discover and develop mimotope-based immunotherapies against validated and new oncology targets. This partnership has the potential to create game-changing B cell peptide vaccines that would replace or augment conventional monoclonal antibody therapies.