

## First Plant-based Production of PAT-SM6

- Publication in peer reviewed journal provides proof for an alternative production system for the IgM antibody PAT-SM6
- These studies show the advancement in expression technologies for IgMs

**Melbourne, Australia; 2 April, 2014:** Patrys Limited (**ASX: PAB**), a clinical stage biotechnology company, today announced that data on the production of PAT-SM6 in an easy-to-grow plant manufacturing system have been published in the leading peer-reviewed journal *Proceedings of the National Academy of Sciences (PNAS)*. The article titled "Expression and glycoengineering of functionally active hetero-multimeric IgM in plants" is currently available online ahead of a future print edition of the journal.

The study was the result of a research collaboration involving Patrys and the University of Natural Resources and Life Sciences, Vienna, Austria. The collaboration has focused on developing an alternative production system for the manufacture of IgM antibodies (using PAT-SM6) which might significantly reduce production costs while maintaining the quality and functionality of the antibody products.

The study found that relatively high quantities of PAT-SM6 IgM antibody can be made in an easy-to-grow plant manufacturing system. Further, functionality of antibodies very often depends on the attached sugars. It was shown that by modulating the properties of the plants, a process called *in planta* glycoengineering, this plant expression system can produce fully functional antibodies that are similar to the antibodies generated by the human body. The study demonstrated this novel plant-based process can be successfully applied to generate high yield, functional, human-like IgM antibodies.

"The exciting and novel data presented in this paper show, for the first time, that functional IgM antibodies can be made efficiently, quickly and highly cost-effectively in a plant-based system. We believe that such a manufacturing system holds real promise for the future and further work in this area is ongoing" said Dr. Frank Hensel, publication author and Vice President of Research and Development at Patrys.

Dr. Marie Roskrow, Patrys' CEO added: "Patrys was the first company to be credited with the development of IgM antibodies in human PER.C6 cells. We are very excited that our lead product, PAT-SM6, is once again at the forefront of new discoveries and the results of this collaboration prove that the IgM class of antibodies, that Patrys is focused on, can become the immunotherapy of choice in the near future with the possibility of using different antibody production platforms."

A summary of the study published in PNAS is available for download at:

<http://www.pnas.org/content/early/2014/03/26/1320544111.full.pdf+html?sid=4b39d80f-13dd-440f-855f-58ce8c7fc49c>

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**About Patrys Limited:**

Based in Melbourne, Australia, Patrys (ASX: PAB) is focused on the development of natural human antibodies as therapies for cancer and other major diseases. Patrys has a deep pipeline of anti-cancer natural human antibodies that enable both internal development and partnering opportunities. More information can be found at [www.patrys.com](http://www.patrys.com).

**About PAT-SM6:**

PAT-SM6 is a natural human IgM antibody which has been shown to have potent anti-cancer properties in a large number of laboratory and animal studies. More specifically, Patrys has screened PAT-SM6 against more than 200 tumours from individual patients with various cancers, and the product binds to over 90% of the tumours screened regardless of cancer type or patient age, gender or disease stage. Patrys has filed patent applications to cover the PAT-SM6 antibody molecule, disease target, and the mechanism of action. Patrys' PAT-SM6 has shown convincing evidence of potential therapeutic benefit in the recently completed Phase I/IIa clinical trial in patients with relapsed and refractory multiple myeloma. PAT-SM6 has been granted orphan drug status in Europe and the USA for multiple myeloma. Patrys has also successfully completed a Phase I clinical trial to evaluate PAT-SM6 as a therapy for melanoma. Patrys is now preparing for the next clinical trial (a combination study of PAT-SM6 and Carfilzomib) which is to be sponsored by Onyx Pharmaceuticals, a subsidiary of Amgen.