



**ASX & Media Release**

## **Two new deoxymab patents granted in the USA**

- The first patent covers the composition of matter for Patrys' lead clinical deoxymab antibodies PAT-DX1 and PAT-DX3
- The second US patent covers use of Patrys' novel deoxymab technology, including both PAT-DX1 and PAT-DX3, conjugated to a nanocarrier for the treatment of cancer
- These patents provide protection for the intellectual property and claims that they encompass until 2039

**Melbourne, Australia; 17 April 2023:** Patrys Limited (ASX: PAB, "Patrys" or the "Company"), a therapeutic antibody development company, is pleased to announce that the US Patent and Trademark Organisation (US PTO) has granted two patents that provide further intellectual property protection for Patrys' deoxymab antibody technology until 2039.

The two patents that have been granted by the US PTO are:

- US patent number: 11,613,590, titled "*Binding proteins 1*" which provides coverage until September 2039; and
- US patent number: 11,590,242, titled "*Antibody-mediated autocatalytic, targeted delivery of nanocarriers to tumors*" which provides coverage until January 2039.

The composition of matter patent provides robust intellectual property protection around the deoxymabs themselves, including variants thereof, as well as their use for therapeutic applications. This patent, co-filed with Yale University, is the first US patent to be granted specifically for PAT-DX1 and PAT-DX3, the humanized forms of the original 3E10 antibody.

The second patent covers the combination of deoxymabs with nanocarriers that simultaneously cause DNA damage or inhibit the repair of damaged DNA to potentially provide a powerful new approach for treating cancer. There are now five granted patents covering the use of conjugated deoxymabs that provide opportunities for both internal development programs and partnering opportunities for Patrys.

**Patrys Chief Executive Officer and Managing Director, Dr. James Campbell said:** "The granting of these two patents provides Patrys with robust intellectual property covering both the humanized form of the antibody and its conjugated form. The Company has multiple patents granted in the United States and other major jurisdictions which cover a broad range of applications for using deoxymabs to treat cancer and deliver therapeutic payloads. As well as expanding Patrys' patent estate, these new patents provide the intellectual property coverage to enable the Company or potential partners or licensees to invest in development programs for these applications."



There are now six granted patents covering the unconjugated form of deoxymab 3E10 (and derivatives thereof) in Europe, Japan, China, and three granted in the US. In addition, there are five patents covering nanoparticle conjugation that have been granted in Australia, Canada, China, India and the US. In total, Patrys and/or Yale have filed over 44 patent applications across 13 different patent families in major jurisdictions which provides the Company with a significant patent estate covering the use of its unique deoxymab platform for the treatment of cancer.

**-Ends-**

This announcement is authorised for release by the Board of Directors of Patrys Limited.

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**About Patrys Limited**

Based in Melbourne, Australia, Patrys (ASX:PAB) is focused on the development of its deoxymab platform of cell-penetrating antibodies as therapies for a range of different cancers. More information can be found at [www.patrys.com](http://www.patrys.com).

About Patrys' deoxymab 3E10 platform: Patrys' deoxymab platform is based on the deoxymab 3E10 antibody that was first identified as an autoantibody in a mouse model of the human disease systemic lupus erythematosus (SLE). While most antibodies bind to cell surface markers, deoxymab 3E10 penetrates into the cell nuclei and binds directly to DNA where it inhibits DNA repair processes. Cancer cells often have high levels of mutations and underlying deficiencies in the DNA repair mechanisms. For these reasons, the additional inhibition of the DNA repair processes by deoxymab 3E10 can kill cancer cells, but appears to have little impact on normal cells. As a single agent, deoxymab 3E10 has been shown to significantly enhance the efficacy of both chemo- and radiotherapies. Further, deoxymab 3E10 can be conjugated to nanoparticles to target delivery of chemotherapeutics and imaging agents to tumours.

Patrys has developed two humanised forms of deoxymab 3E10, both which have improved activity over the original deoxymab 3E10 antibody. PAT-DX1 is a dimer (two joined subunits) of the short chain from the binding domain of deoxymab 3E10, while PAT-DX3 is a full-sized IgG antibody. In a range of



pre-clinical studies, PAT-DX1 has shown significant ability to kill cancer cells in cell models, human tumour explants, xenograft and orthotopic models. PAT-DX1 has been shown to cross the blood brain barrier, reduce tumour size, and increase survival in multiple animal models of brain cancer, other cancers, and cancer metastases. PAT-DX1 is tumour-agnostic, meaning that it can target many different tumour types in the body, regardless of specific tumour antigens. Patrys believes that PAT-DX1 may have application across a wide range of cancers including gliomas, melanomas, prostate, breast, pancreatic and ovarian cancers.

Deoxymabs, such as PAT-DX1 and PAT-DX3, can be used to target nanoparticles carrying a payload of anti-cancer drugs specifically to tumours. This allows specific delivery of cancer drugs to multiple types of cancer while having minimal impact on normal, healthy cells.

Patrys' rights to deoxymab 3E10 are part of a worldwide license to develop and commercialise a portfolio of novel anti-DNA antibodies and antibody fragments, variants and conjugates discovered at Yale University as anti-cancer and diagnostic agents. Six patents covering the unconjugated form of deoxymab 3E10 (and derivatives thereof) have already been granted (Europe, Japan, China, and 3 in the USA), and five patents covering nanoparticle conjugation have been granted (Australia, Canada, China, India and the USA).