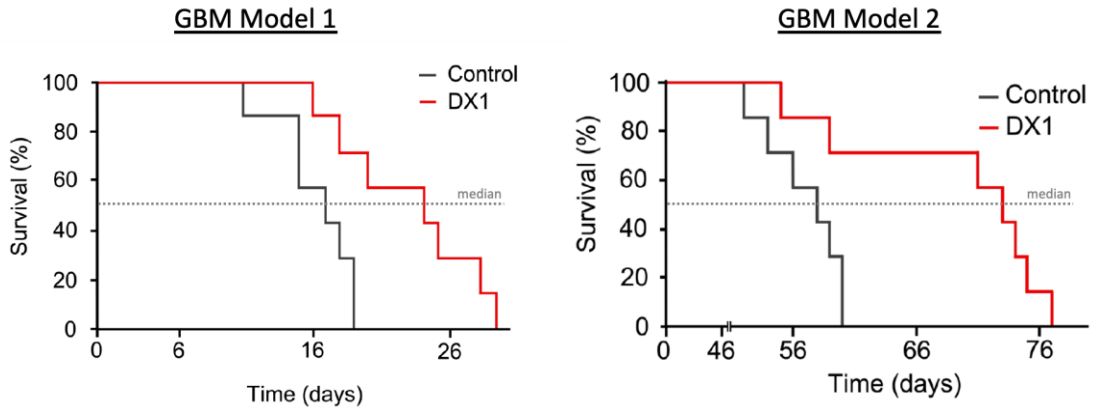
ASX & Media Release

New publication highlights PAT-DX1 as potential therapeutic for brain cancers and metastases

Melbourne, Australia; 16 June 2021: Patrys Limited (ASX: PAB, "Patrys" or the "Company"), a therapeutic antibody development company, is pleased to announce the publication of new preclinical data for its deoxymab antibody PAT-DX1. This data, from studies conducted in three different animal models, further demonstrates the unique ability of Patrys' PAT-DX1 antibody to cross the blood-brain barrier (BBB) and significantly inhibit the growth of both primary and secondary cancers in the brain.

The publication, entitled *"ENT2 facilitates brain endothelial cell penetration and blood-brain barrier transport by a tumor-targeting anti-DNA autoantibody"*, has been published in the leading, peer-reviewed journal *The Journal of Clinical Investigation—Insight*, and builds on data previously disclosed by Patrys. The investigators show that, like the full-size antibody 3E10, Patrys' humanised deoxymab fragment, PAT-DX1 uses the nucleoside transporter protein ENT2 to cross the BBB. Most antibodies are unable to cross either cell membranes or the BBB, which limits their use for certain applications such as treating cancers in the brain and intracellular targeting of therapeutic payloads. Patrys believes the unique ability of deoxymabs to be transported intact across cell membranes and the BBB using the ENT2 nucleoside transporter is likely to be related to the biology of these particular antibodies rather than provide a general mechanism that could be used for other antibodies.

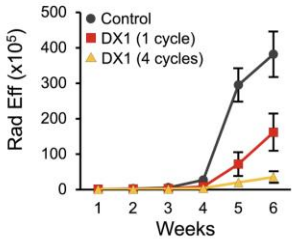
The investigators also demonstrated that PAT-DX1 is able to significantly inhibit the growth of tumours in three different models of cancer once it crosses the BBB. Two different models of glioblastoma (GBM Model 1 and GBM Model 2) were tested and treatment with PAT-DX1 resulted in a 47% (24 days v 17 days, $p<0.01$) and 25% (73 days v 58 days, $p<0.02$) improvement in median survival respectively.



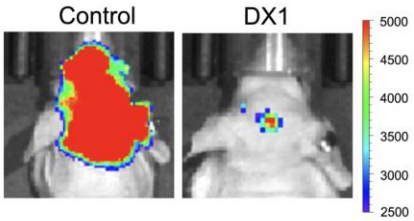
In both these models, human glioblastoma cells were implanted in the brain tissue of animals which were then treated with PAT-DX1 once tumours had become established in the brain.

PAT-DX1 was also tested in a third animal model designed to replicate the metastases of breast cancer into brain tissue. In this model, a human breast cancer cell line that is known to migrate to the brain and establish metastatic tumours was injected into the bloodstream. This model is considered one of the most challenging brain tumour models to treat. The number of tumours established in the brain was significantly reduced ($p<0.01$) when animals were treated with PAT-DX1 and this reduction in brain cancer metastases resulted in a statistically significant 45% (45 days v 31 days, $p<0.002$) improvement in median survival.

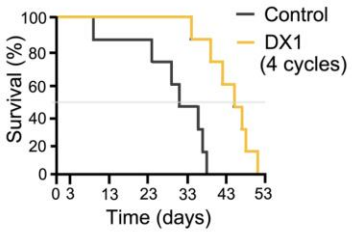
Dose-dependent response



Reduces brain metastases



Improves survival by 45%



The ability of PAT-DX1 to cross the BBB, localise to both primary and secondary tumours in the brain, and then selectively kill cancer cells by blocking their DNA Damage Repair (DDR) systems highlights the potential for Patrys' deoxymabs to provide much-needed, new therapeutic options for the treatment of cancers located in the brain.

Patrys Chief Executive Officer and Managing Director, Dr. James Campbell said: "We continue to be impressed with the robust scientific evidence and rationale that is backing the development of our deoxymab drug platform. This publication, in a highly-regarded, peer-reviewed journal is further validation of the pioneering position that Patrys and its collaborators at Yale School of Medicine have established with its deoxymab platform. Glioblastoma and TNBC brain metastatses are very difficult to treat, and the prognosis for patients with these cancers is generally poor. We are excited by the potential that PAT-DX1 shows in animal models of these cancers and are on track for the first-in-man study of our lead deoxymab asset, PAT-DX1, in H1 of CY 2022."

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

For further information, please contact:

General enquiries
James Campbell
Chief Executive Officer
P: +61 3 96703273
info@patrys.com

Media enquiries:
Haley Chartres
H^CK
P: +61 423 139 163
haley@hck.digital

Registered Office Address
Level 4, 100 Albert Road
South Melbourne VIC 3205

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.

About Patrys' deoxymab platform:

Patrys' deoxymab platform is based on the deoxymab 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 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 can kill cancer cells, but appears to have little impact on normal cells. As a single agent, deoxymab has been shown to significantly enhance the efficacy of both chemo- and radiotherapies. Further, deoxymabs can be conjugated to nanoparticles to target delivery of chemotherapeutics and imaging agents to tumours.

Patrys has developed two humanised forms of deoxymab, both which have improved activity over the original deoxymab antibody. PAT-DX1 is a dimer (two joined subunits) of the short chain from the binding domain of deoxymab, 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 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 (and derivatives thereof) have already been granted (Europe, Japan, China, and 3 in the USA), and one patent covering nanoparticle conjugation has been granted (Australia).