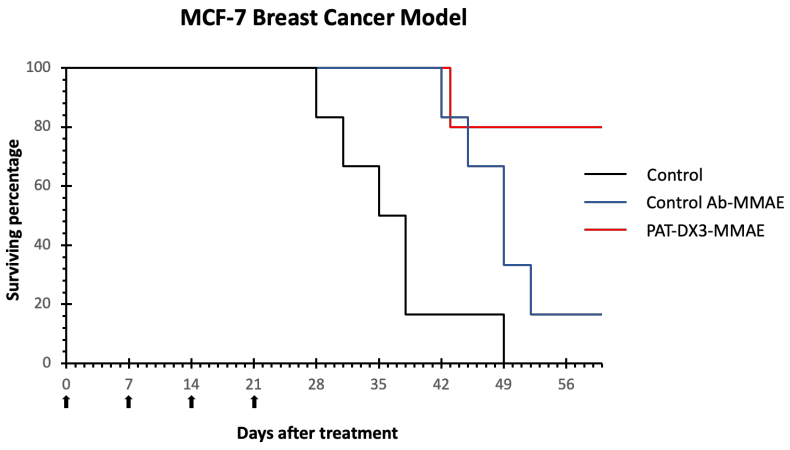
ASX & Media Release

Patrys deoxymab antibody drug conjugate significantly increases survival in animal model of breast cancer

Melbourne, Australia; 18 October 2021: Patrys Limited (ASX: PAB, "Patrys" or the "Company"), a therapeutic antibody development company, is pleased to announce data from its completed preclinical study which has demonstrated that Patrys' full-sized deoxymab antibody, PAT-DX3, can be used as a targeting agent for antibody drug conjugates (ADC) to deliver anti-cancer drugs to tumours.

Patrys previously announced in September 2021 preliminary data showing that administration of an ADC in which PAT-DX3 was conjugated to the anticancer drug monomethyl auristatin E (MMAE) significantly inhibited the growth of tumours in mice implanted with xenografts of the human breast cancer cell line MCF7.

With this study now complete, Patrys reports that this inhibition of tumour growth resulted in a significant improvement in survival in animals treated with the ADC based on Patrys' PAT-DX3 deoxymab. At day 60, the completion date for this study, 80% of the animals treated with PAT-DX3-MMAE were still alive (red). This was 39 days after the last treatment with PAT-DX3-MMAE was administered. By comparison, all of the animals in the untreated control group had been euthanised because of tumour growth by day 60 (black), and only one animal treated in the non-specific, control antibody group remained alive (blue). PAT-DX3-MMAE significantly increased survival compared to the control group of animals ($p<0.005$).



In this study, PAT-DX3-MMAE was administered to mice (6 mice per group) on days 0, 7, 14 and 21 of the study (shown as arrows in the figure above). The control groups comprised animals that received no treatment as well animals that were treated with a non-specific antibody conjugated to MMAE. Differences in tumour growth inhibition (slide 16, Company Overview 28 September, 2021) and survival (above) clearly show a targeting effect caused by the PAT-DX3 antibody.

Patrys Chief Executive Officer and Managing Director, Dr. James Campbell said: "It is very exciting to report such positive data from our proof-of-concept study showing that Patrys' deoxymabs may have potential as targeting agents for ADCs.

"While most ADCs are based on antibodies directed against cell surface antigens that are specific for a particular tumour, our deoxymabs are attracted to the DNA that is released from most cancers as a result of the high rates of cell death and cell turnover in tumours.

"This preclinical study has shown that the affinity our deoxymabs have for DNA is sufficient for them to target the delivery of cancer drugs to tumours where they can inhibit tumour growth and improve survival. This exciting finding may open up new opportunities for deoxymabs as a basis for developing new therapeutic ADC products. Additional studies will need to be performed to better understand the potential impacts of on-target and off-target toxicity using this approach; however, the results from this study have clearly demonstrated the proof-of-concept.

"We look forward to advancing this program as an adjunct to our planned first in human clinical study of PAT-DX1, which remains on track for late 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.

Patrys has completed proof of concept studies showing that it is possible to conjugate small molecule payloads to PAT-DX3, and is advancing antibody drug conjugate (ADC) efforts using deoxymabs. In addition, 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).

About MMAE:

Monomethyl auristatin E (MMAE) is a highly potent anti-cancer compound which, due to its extreme toxicity, can only be used when conjugated to an antibody for targeted delivery. MMAE has been used in several ADC's, some of which are approved or in late-stage clinical development.