Corporate Overview
September 2019

Introduction

Patrys is a therapeutic antibody oncology company focussed on the development of cell penetrating antibodies and antibody fragments. With a Board, management and advisors who have progressed multiple antibody and small molecule drugs through development to approval and commercialization Patrys has built a unique position in the global antibody arena.

Patrys' assets were in-licensed from Yale University in 2016, and have given the Company a strong position at the convergence of two proven anti-cancer technologies – antibodies and DNA damage repair (DDR) therapeutics. Patrys' lead agent, PAT-DX1 binds to damaged DNA in cancer cells and blocks the DDR pathway by preventing repair enzymes from binding to, and repairing the damaged DNA.

Therapeutic antibodies

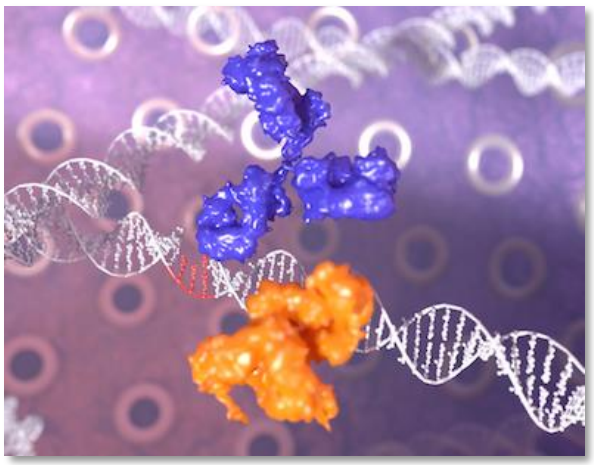
Therapeutic antibodies work by restoring, enhancing or mimicking the immune system's attack on cancer cells, binding to antigens that are more numerous on the surface of cancer cells than healthy cells. Once bound, antibodies cause cancer cell death via a range of mechanisms. Anti-cancer therapeutic antibodies are an established technology, with more than 30 different antibodies approved for use by the US FDA. The global market is estimated at US$40B in 2019.

DNA Damage Repair (DDR) Therapeutics

The DDR pathway is complex and has evolved to help cells identify and repair DNA damage via recruitment and activation of DNA repair enzymes. Several different DNA repair pathways exist – including single stranded, double-stranded and homologous recombination DNA break repair. These corrective mechanisms are tightly regulated, with an orderly progression through alternate DNA repair pathways. In the absence of the preferred repair pathway, incorrect pathways can be deleterious to a cell.

PARP inhibitors were one of the first therapeutics developed targeting the DDR pathway. PARP inhibitors were first approved for patients with recurrent ovarian cancer, and the number of approved indications for the use of these drugs has increased. The therapeutic attraction of PARP inhibitors has increased based on a convenient oral dosing schedule and trials showing efficacy in multiple indications.

There are 4 PARP inhibitors on market: olaparib (Lynparza®) (ovarian and breast), rucaparib (Rubraca®) (ovarian), niraparib (Zejula®) (ovarian) and Talazoparib (Talzenna®) (breast).

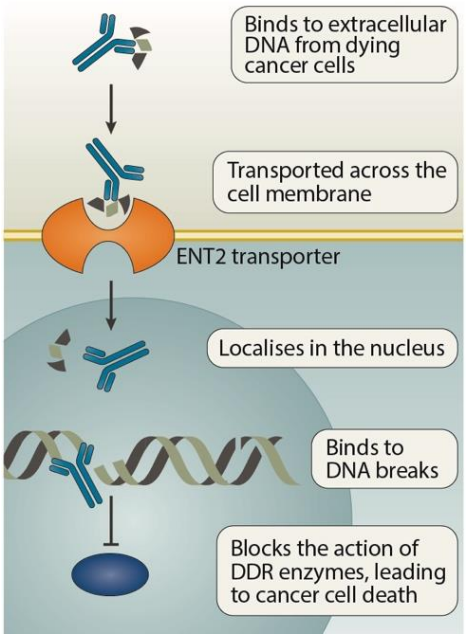


Patrys is at the forefront of development of DDR pathway antibody therapeutics with the Deoxymab platform combining the advantages of IgG technologies with the attractive modality of blocking DNA damage repair enzymes.

PAT-DX1

Patrys is developing a first-in-class platform technology with potential to revolutionise treatment across a broad range of cancers. PAT-DX1 is an auto-antibody that has been re-engineered as a humanised di-scFv.

PAT-DX1 is transported across the cell membrane then the nuclear membrane where it inhibits DNA repair and kills DNA damage repair-deficient cancer cells with BRCA2 and PTEN mutations.



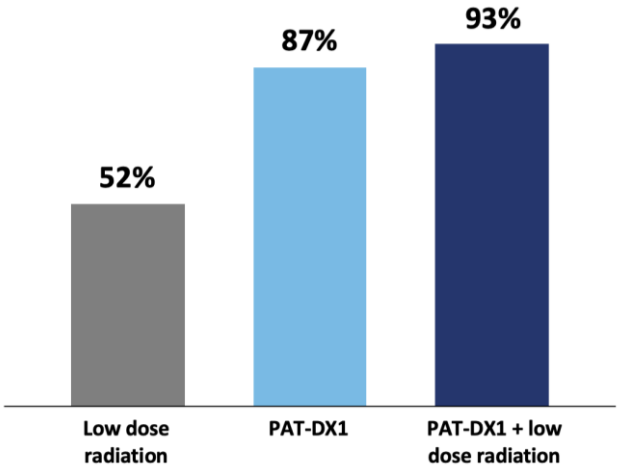
The antibody has the ability to sensitise cancer cells to radiation and chemotherapy and to interfere with cells' ability to sustain themselves through DNA repair. These characteristics of PAT-DX1 open up new avenues for treatment of BRCA2 and PTEN-related cancers including breast, brain gliomas, astrocytomas, head and neck carcinomas.

Some of the differentiating features of the PAT-DX1 platform include:

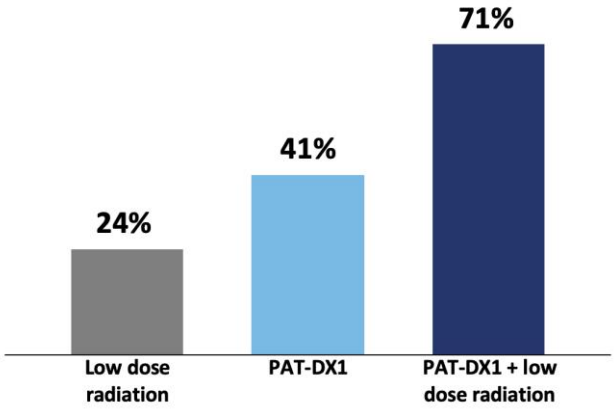
- preferential localisation to tumours
- penetration of the cell membrane and nucleus
- crossing of the blood brain barrier (BBB)
- killing cancer cells that are DDR deficient, and
- enhancing low dose radiation therapy

Patrys has completed animal studies in orthotopic models of glioblastoma and TNBC brain metastases, and shown tumour reduction and increased survival both as a single agent and in combination with radiation therapy.

In an orthotopic model of glioblastoma, PAT-DX1 suppresses tumour growth



… and increases survival



PAT-DX1-NP

In June 2017, Patrys in-licensed from Yale University the worldwide rights to develop and commercialise technology pertaining to the linking of Deoxymab 3E10 to nanoparticles. Attaching nanoparticles to PAT-DX1 creates a cancer-targeting delivery vehicle for a range of 'cargoes' including standard chemotherapeutic (or other) drugs and has been demonstrated to significantly increase the efficacy of the drug therapy in pre-clinical models.

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