Tandem antibody technology

A novel and versatile platform technology designed for targeted cancer therapy. The product leverages tandem antibody constructs for precise and efficient cancer cell elimination. It offers potential for customization across various cancer targets and indications, supported by a strong intellectual property position. Ideal for advancing preclinical and clinical development in oncology treatment.

Business Opportunity

This licensing opportunity offers a cutting-edge platform technology designed for the development of innovative cancer therapies. The core invention employs a tandem antibody construct capable of precisely targeting cancer cells, enabling effective and selective tumor cell elimination. This approach addresses a significant unmet need in oncology by providing a tailored therapeutic option that minimizes off-target effects associated with conventional treatments.

The technology's versatility allows it to be adapted for a range of oncology indications, with particular suitability for difficult-to-treat cancers. It holds strong promise in improving patient outcomes while potentially reducing healthcare costs by enhancing treatment precision and efficacy. Comparatively, existing monoclonal antibody therapies are limited by specificity or suboptimal clinical outcomes in certain settings, providing a clear gap this product aims to fill.

The market opportunity is substantial, with the global oncology therapeutics market valued at over $177 billion in 2022 and projected to reach $370 billion by 2030. The number of patients worldwide benefiting from targeted cancer therapies is growing, reflecting the increasing demand for tailored treatment approaches. Specific focus areas such as HER2-positive breast cancer or GD2-expressing neuroblastoma further define addressable market segments with high unmet needs.

The business model includes outlicensing the technology to industry stakeholders for further preclinical and clinical development. A hybrid strategy allows for licensing specific applications while retaining flexibility to explore broader platform use under future development. Initial proof-of-concept data in advanced preclinical models will significantly de-risk the opportunity for partners and validate the commercial viability of the approach.

Path to commercialization involves leveraging robust preclinical proof-of-concept studies to secure industrial partnerships or licensing agreements focused on specific cancer targets. These partnerships will accelerate the development timeline and provide critical feedback on the technology’s applicability and market potential. Early interest from the industry underscores the demand for innovative therapeutic platforms addressing current limitations in cancer care. This technology represents a promising opportunity for companies seeking a high-potential platform to create differentiated oncology therapeutics with wide-reaching market applications.

Category

Therapies/Biologics
Therapies/Other interventions

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Technology Description

This technology is a novel therapeutic platform utilizing tandem antibody constructs designed to enhance the precision and efficacy of cancer treatment. The approach combines two distinct binding domains within a single molecule to target specific cancer cell markers. By engaging multiple targets simultaneously, it achieves a high degree of tumor specificity, minimizing damage to healthy cells and reducing off-target effects often observed in conventional treatments.

The construct works by binding to a primary cancer-specific antigen and a second target, such as an immune receptor or another cancer marker, facilitating precise immune system engagement or dual pathway modulation. This ensures enhanced therapeutic outcomes by leveraging synergistic mechanisms of action. The platform's adaptability allows for the modular design of antibodies, enabling customization for different cancers and clinical needs. For example, it can be tailored to target HER2-positive breast cancer or GD2-expressing neuroblastoma, among other indications.

What sets this technology apart from existing monoclonal antibody therapies is its dual-target approach, which offers improved treatment accuracy and effectiveness while overcoming limitations like insufficient targeting or escape mechanisms seen in single-target therapies. As a result, it provides a robust and versatile tool to improve patient outcomes across diverse oncology applications.

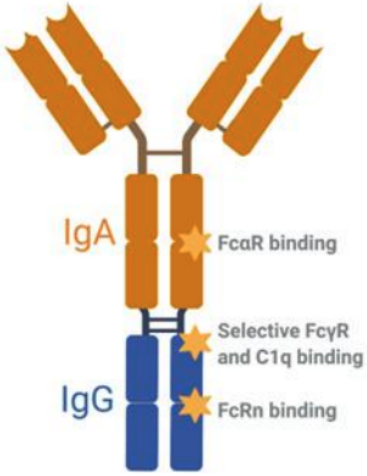

Fig. 1: TandemAb

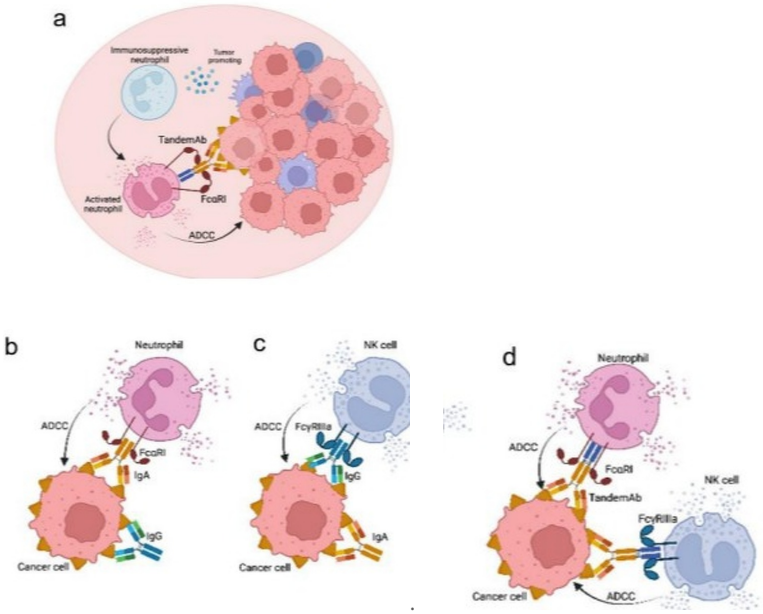

Fig. 2: The TandemAb technology. **(a)** Neutrophils in the tumor microenvironment may promote tumor growth, but engagement of their FcαRI with tumor target binding IgA Fc-containing designs can turn these cells into potent ADCC mediators. **(b)** An anti-cancer IgA bound to its target engages neutrophils by cross-binding to human FcαRI, resulting in ADCC. IgG does not. **(c)** An anti-cancer IgG bound to its target engages NK cells via Fc RIIIa for induction of ADCC. IgA does not. **(d)** The TandemAb design can engage both neutrophils and NK cells.

Intellectual Property

The intellectual property generated by the project includes: Platform Technology: A proprietary therapeutic platform for developing tandem antibody constructs that target cancer cells with high specificity and efficiency. Target-Specific Products: Applications of the platform for particular cancer targets, such as HER2-positive breast cancer and GD2-expressing neuroblastoma. Planned Freedom-to-Operate (FTO) Analysis: Assessment for both the platform technology and target-specific products.