

## Press release

### **Biomunex Pharmaceuticals, a company specialized in cancer therapeutics, presents new preclinical data on its proprietary MAIT cell redirection approach at the AACR<sup>1</sup> 2024**

- **Biomunex is the first company worldwide to focus on the development of MAIT engagers, a new class of bispecific antibodies capable of specifically engaging and redirecting the cytotoxic activity of MAIT cells, a subpopulation of T-cells that are naturally present in most tissues of the body and in the majority of cancers, to specifically kill tumor cells enabling tumor eradication.**
- **The ability of Biomunex' MAIT engagers, based on the proprietary bi- and multi-specific antibody BiXAb<sup>®</sup> platform, to activate only MAIT cells without affecting the rest of the immune cell population, limits the release of excessive cytokines, preventing risk of cytokine release syndrome<sup>2</sup>, a potential serious side effect of classical CD3ε T cell engagers.**
- **Data to be presented by Biomunex at AACR 2024 annual meeting will showcase how BiXAb-MAIT engagers are able to redirect tumor-resident MAIT cells from fresh human tumor samples to eliminate cancer cells in *ex-vivo* cytotoxicity studies and can elicit tumor growth inhibition in patient-derived 3D organoid models of cancer.**
- **MAIT engagers, at difference to classical CD3ε T cell engagers, are expected to provide a larger therapeutic window, which will result in more efficient and safer anti-cancer therapeutics, particularly in solid tumors.**

**Paris, France, and Cambridge, Massachusetts, USA, April 9<sup>th</sup>, 2024** - **Biomunex Pharmaceuticals**, a French biopharmaceutical company focused on the development of immunotherapies based on the discovery and development of bi- and multi-specific antibodies for the treatment of cancer, announces today that it will present new scientific data at the American Association for Cancer Research (AACR) annual meeting, which takes place from April 5<sup>th</sup> to April 10<sup>th</sup>, 2024 at the San Diego Conference Centre, San Diego, California, USA.

During this meeting, Dr. Simon Plyte, Chief Scientific Officer of Biomunex, will present a poster entitled: "MAIT engagers: Bispecific antibody-mediated redirection of Mucosal Associated Invariant T-cells to treat solid tumors" during the "Targeted Immune Cell Engagers" session, which will be held on Wednesday, April 10<sup>th</sup>, 2024, from 9.00 a.m. to 12:30 p.m.

The presentation will be focused on recent data obtained by Biomunex, detailing the properties of bispecific antibodies generated through Biomunex' proprietary BiXAb<sup>®</sup> platform, and in particular their ability to specifically target and redirect MAIT cells (Mucosal Associated Invariant T cells) to eliminate tumor cells.

MAIT cells are a subpopulation of non-conventional T cells found throughout the body, particularly in mucosal and barrier tissues. The data generated by the MAIT engager are compared to that of a T cell engager targeting

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<sup>1</sup> AACR: American Association for Cancer Research

<sup>2</sup> Cytokine release syndrome can cause a variety of symptoms ranging from fever or flu-like symptoms to severe, life-threatening manifestations.

CD3 $\epsilon$  resulting in identical potency in cytotoxicity assays, but with a much lower risk of cytokine release syndrome.

Indeed, MAIT engagers only cause activation and proliferation of MAIT cells, whilst CD3 $\epsilon$  T cell engagers induce activation and proliferation of all T-cell subsets. This difference is further demonstrated by observing the minimal, but active, cytokine release from a MAIT engager compared to the large release of cytokines induced by a classical CD3 $\epsilon$  T cell engager (most notably IL-6 which triggers cytokine release syndrome). This feature gives MAIT engagers a superior safety profile.

These data demonstrate that thanks to better safety and tolerability of MAIT engagers and equivalent anti-tumor efficacy to classical CD3 $\epsilon$  T cell engagers, use of MAIT engagers should bring a much larger therapeutic window, something that is usually lacking for classical CD3 $\epsilon$  T cell engagers, particularly in solid tumors. This will enable safer dosing of MAIT engagers at much higher doses for the treatment in solid tumors.

Comparative data between MAIT engagers and CD3 $\epsilon$  T cell engagers also focuses on the regulatory T-cell (Treg) population that are typically strongly immunosuppressive in the tumor microenvironment. MAIT engagers have no impact on this regulatory T-cell subset, whilst CD3 $\epsilon$  T cell engagers cause activation and proliferation of Tregs that may lead to increased immunosuppression in solid tumors.

Data will be presented using clinically relevant models. Experiments with fresh ovarian tumor samples, treated with a MAIT engager, show that tumor resident MAIT cells are potent cytotoxic T cells, similar to those in circulation, and that they proliferate and serial kill the tumor cells in response to the MAIT engager, to enable tumor eradication. Finally, data in 3D models of cancer show that MAIT cells, in response to a MAIT engager, can infiltrate and kill tumor cells.

Fruit of its collaboration with Institut Curie, France's first and leading cancer research center, and Dr. Olivier Lantz, Director of the Clinical Immunology Laboratory at Institut Curie, that discovered MAIT cells more than 20 years ago, Biomunex has recently [obtained the full worldwide rights from Institut Curie](#) on this approach of MAIT cell redirection. Biomunex' pipeline currently includes notably several BiXAb-MAIT engagers, directed to different tumor associated antigens; at least one of which will soon start clinical trials to evaluate this novel drug modality.

*"These new data confirm the ability of MAIT cells to eliminate cancer cells, wherever they may be in the body, without causing serious adverse side-effects for patients, a very important criterion in the development of new immunotherapies in oncology nowadays. We look forward to confirming these data with the launch of the world's very first clinical trial evaluating a MAIT engager in the treatment of cancer,"* **said Dr. Simon Plyte, Chief Scientific Officer of Biomunex.**

*"We are very proud of the data we are presenting at this year's AACR, which demonstrate the therapeutic potential of our BiXAb-MAIT engagers, that could become a game-changing approach capable of bringing a true step forward in the cancer treatment, particularly in solid tumors,"* **added Dr. Pierre-Emmanuel Gerard, founder and CEO of Biomunex.**

#### **Information about Biomunex' presentation:**

**Title:** MAIT engagers: Bispecific antibody-mediated redirection of Mucosal Associated Invariant T-cells to treat solid tumors

**Session Category:** Immunology

**Session Title:** Targeted Immune Cell Engagers

**Session Date and Time:** Wednesday Apr 10, 2024 9:00 AM – 12:30 PM

**Location:** Poster Section 3

**Poster Board Number:** 6

**Published Abstract Number:** 6708



**About Biomunex Pharmaceuticals:** [www.biomunex.com](http://www.biomunex.com)

Biomunex Pharmaceuticals is a biopharmaceutical company based in Paris (France) and Cambridge, MA, USA, led by an international and experienced team. Biomunex is specialized in the discovery and development of breakthrough therapeutic approaches, based on solid data and proven biological and clinical evidence, to address unmet medical needs in oncology.

Biomunex has created and developed BiXAb®, a robust, “Plug and Play”, next-generation bi- and multi-specific antibody technology platform, using a proprietary computational modeling approach, with a very robust IP and patent portfolio. The BiXAb platform, which allows the generation of bispecific antibodies from any pair of monoclonal antibodies in a simple, fast and cost-effective manner, has been validated through licensing agreements and collaborations with the pharmaceutical and biotech industry, with Sanofi then Onward Therapeutics.

Biomunex is the first company worldwide developing an immuno-oncology approach that allows, through bispecific antibodies from its BiXAb platform, to specifically target, engage and redirect MAIT cells, a subpopulation of T cells present throughout the body, particularly in mucosal and barrier tissues, to kill cancer cells, for the treatment of solid tumors.

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