

MetaCurUm Biotech AB

NOVEL ANTIBODY TREATMENT FOR METASTATIC CANCERS



Maréne Landström

Market need and potential

MetaCurUm Biotech is developing a novel antibody treatment for aggressive and metastatic cancers that targets the transforming growth factor beta (TGFβ) signaling pathway.

Cancer is the second leading cause of death globally (~17% of all deaths). Thanks to new effective treatments and a better understanding of the disease biology, many patients can be cured or are at least expected to live longer compared to just a decade ago.

However, patients with metastatic cancers still have a poor prognosis and ninety percent of all cancer deaths are due to the spread of cancer to other parts of the body. There is therefore a great need for drugs that prevent or treat metastatic cancer.

Business idea

TGFβ plays fundamental roles in cell growth and differentiation. TGFβ is also associated with a number of pathological processes such as cancer and fibrosis. In cancer cells, aberrant and upregulated TGFβ signaling is associated with tumor progression and the formation of metastases.

MetaCurUm Biotech's antibody drug candidate targets an oncogenic TGFβ signaling pathway utilized by cancer cells to become invasive and to metastasize. Due to the unique mode of action, potential advantages compared to current treatment approaches could be fewer side effects leading to improved quality of life and overall survival.

MetaCurUm Biotech's drug development program is focused on TGFβ target driven cancers, with the aim to optimize the treatment paradigms in aggressive forms of cancer with high unmet medical need such as prostate, lung, kidney, and endometrial cancer. Other indications related to TGFβ such as fibrotic diseases will also be explored.

Competition

TGFβ has been thoroughly studied and several drug development programs are ongoing. In addition, several recent business collaborations and major licensing deals have been made for the PD-1/TGFβ combination approach, which constitutes a promising future treatment strategy.



Lotta Berg

There are currently around twenty drug candidates in clinical trials targeting the TGFβ pathway for multiple indications including cancer and fibrosis. Drug candidates under development include Galunisertib (small molecule TGFβ type I receptor kinase inhibitor by Eli Lilly), NIS-793 (anti-TGFβ antibody by Novartis) and M7824 (bifunctional fusion protein targeting TGFβ and PD-L1 by GlaxoSmithKline and Merck).

There is one drug targeting the TGFβ pathway (Reblozyl®) approved by the FDA for the treatment of anemia in beta-thalassemia.

Advantages

The patients that may benefit from the antibody treatment are primarily those with established metastatic cancers, or patients with risk of developing it. There is also a potential that patients that have developed resistance to existing therapy regimens may benefit from such novel treatment approach.

MetaCurUm Biotech's treatment strategy aims to:

- Prevent metastasis of cancer cells by blocking an oncogenic TGFβ signaling pathway
- Extend the overall survival for patients with aggressive cancer by offering a more efficacious stand-alone or combination treatment

Companion biomarkers are also under development to facilitate patient selection and to monitor treatment effects.

Current status

An *in vivo* proof of concept study is currently ongoing to investigate the effects of the candidate antibody on local invasion and metastasis of cancer cells in a metastatic castration-resistant prostate cancer model (results available in Q1 2020). A regulatory strategy is under preparation and we are extending our drug development plan, including IP strategy. The development of a fully human antibody is underway, and GMP manufacturers are being identified.



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IPR

A patent protecting cleavage inhibitors of the TGFβ type I receptor for use in cancer therapy is approved (US 2014/0140998 A1).

Capital need

1.0 m€ during 2020-2021 to cover product-, preclinical- and business development.

Partnership

We are currently seeking investments from private and institutional investors.

Team

Lotta Berg, CEO

Ph.D. Medicinal chemist and project manager.

Maréne Landström, Founder and Board Member

MD. Ph.D. Professor in Pathology and expert on TGFβ signaling.

Thomas Uhlin, Chairman of the Board

B. Sc. Senior advisor in product and business development in Life Science.

Michael Sundström, Board Member

Ph.D. Expert on translational research and preclinical drug discovery.

Torbjörn Bäckström, Board Member

MD. Ph.D. Senior Professor in Obstetrics and Gynecology. Founder of several pharma companies, developed to phase IIb.

Helén Fält, Board Member

Lic. M. Sci. Business coach with experience from business development in start-ups.

Marek Poszepczynski, Business advisor

M. Sci. Eng. Business developer focusing on licensing and financing.

Background

MetaCurUm Biotech AB is a spin-off from the Department of Medical Biosciences at Umeå University, Sweden, based on unique discoveries made by Professor Maréne Landström and her collaborators.