



Summary

Macomics is leveraging its understanding of macrophage biology to develop treatments for cancer based on modulation of tumour-associated macrophages (TAM).

Breakthrough science

TAM can contribute up to half of tumour mass and contribute to the suppression of the immune system in the tumour microenvironment. High numbers of TAM are associated with poor prognosis in cancer patients and reprogramming of TAM into their pro-inflammatory state may be an attractive mechanism for cancer treatment. The study of macrophages and drug discovery efforts have been limited by challenges culturing macrophages that faithfully represent human macrophages. Furthermore, manipulation of gene expression in human macrophages is challenging, due to poor transfection rates, cell viability and maintenance of gene expression changes in different cell states. Building on decades of study of macrophage biology by its founders, Macomics has developed a platform (ENIGMAC) that combines the use of human induced Pluripotent Stem Cells (iPSC) to produce large numbers of macrophages that are phenotypically and functionally similar to human monocyte-derived macrophages, gene editing methods, and clinical bioinformatics data-sets. The platform is applied to new target identification and drug discovery against targets which were previously not possible to study in vitro. Macomics has identified multiple targets that it expects will modulate TAM biology directly or the activity of the broader immune system and is developing a portfolio of antibody-based therapeutics.

Differentiation

Macomics reports that its ENIGMAC platform uses human iPSC derived macrophages to overcome drug discovery challenges specific to macrophages, allowing the company to perform gene-to-function studies by integrating cell models, genome editing and high-throughput screening, to discover novel targets and study disease specific target biology.

→ Highlights

Macomics was founded based on the research of Dr Luca Cassetta and the late Professor Jeffrey Pollard whilst at the University of Edinburgh.

→ Partnerships/collaborations

- Ono Pharmaceutical



Stage:
Pre-clinical

#Macrophages
#DrugDiscovery
#Oncology