

Macomics Unveils ENIGMAC[™] Discovery Platform at AACR for Target Validation in Macrophage Therapies

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Macomics Ltd, a frontrunner in macrophage drug discovery, recently showcased its innovative ENIGMAC[™] macrophage drug discovery platform at the American Association for Cancer Research's Annual Meeting (AACR 2023). The company aims to harness the potential of macrophage-based approaches to create novel precision medicines targeting disease-specific macrophage biology.

The ENIGMAC[™] platform is a powerful tool for gene-to-function studies using human macrophages. Its design allows for the integration of large volume human datasets, custom cell models, and proprietary human macrophage genome editing capabilities. It is disease agnostic, enabling its use in various disease-specific conditions and phenotypic readouts.

Macrophages are crucial components of the tumor microenvironment (TME). A high infiltration of these myeloid cells in tumors is generally associated with poor clinical prognosis. Tumor-associated macrophages (TAMs) influence all other cell types in the tumor by creating a pro-tumoral niche that promotes cancer cell proliferation and invasion.

Dr. Carola Reis, CSO of Macomics, presented the data at AACR and emphasized the importance of 'Omics' techniques to understand the TME's complexity and identify new targets. The ENIGMAC[™] discovery platform combines rigorous bioinformatic analysis with macrophage gene editing and functional analysis, enabling the identification of genetically validated macrophage therapeutic targets that can inform drug screening assay strategies.

The data presented at AACR highlighted Macomics's use of a human Induced Pluripotent Stem Cell (iPSC) line to generate macrophages that are phenotypically and functionally similar to human monocyte-derived macrophages (MDM). This approach allows for the production of millions of macrophages per week for use in multiple high-throughput assays. Macomics also presented its proprietary toolbox, which integrates gene Knock In (KI), Knock Out (KO), and Knock Down (KD) with high efficiency at both the iPSC and macrophage level, maintaining expression and silencing during macrophage differentiation.

Dr. Steve Myatt, CEO of Macomics, elaborated on the company's strategy, stating that TAMs reprogramming has immense potential. By altering the phenotype of a large number of intratumoral TAMs, Macomics aims to not only inhibit their tumor-supporting functions but also enhance their tumor-killing properties. This approach is intended to create a reprogramming domino effect, influencing other immune cells to mount a robust anti-tumor immune response.

The unveiling of the ENIGMAC™ discovery platform at AACR 2023 signals a promising development in the field of macrophage therapy, potentially leading to innovative treatments and a deeper understanding of the complex interactions within the tumor microenvironment.

- Macomics