Technology offer IP-049

Novel compound as inhibitor of Fascin in solid tumors

This technology is based on a novel chemically synthesized compound that inhibits Fascin1, a key protein involved in tumor cell migration and invasion. By blocking actin filament bundling, the compound prevents the formation of cellular protrusions needed for metastasis. It shows strong potential for the prevention and treatment of metastatic cancers.

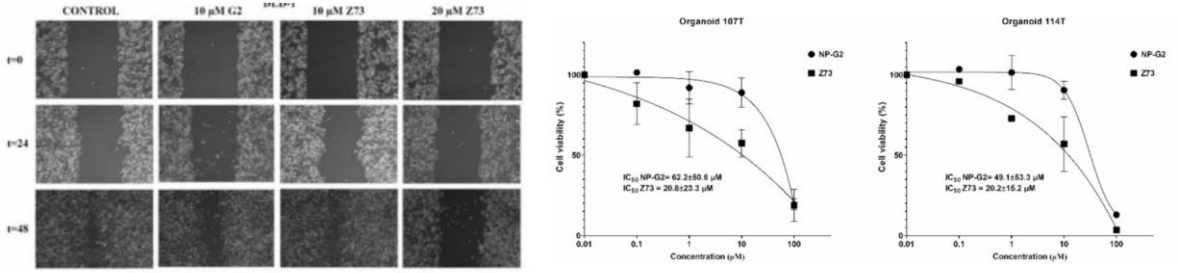

Figure. The migration assays and the viability curves show the effect of the inhibitor on tumor cell migration and viability using CRC cell lines and patient-derived organoids.

Market needs

Colorectal cancer (CRC) is one of the most prevalent cancers worldwide and a leading cause of cancer-related death, largely due to its high metastatic potential. Fascin1, an actin-bundling protein, plays a crucial role in tumor cell invasion and metastasis, and is overexpressed in aggressive forms of CRC, especially in serrated adenocarcinoma, where it is associated with poor prognosis. This overexpression facilitates cell motility and metastatic spread. Current treatments, such as surgery, chemotherapy, and targeted therapies, have limited efficacy in advanced stages. There is a clear need for new therapies targeting metastatic CRC, particularly those that inhibit Fascin1 activity.

Technical solution from IMIB

The proposed technology targets Fascin1, inhibiting its actin-bundling activity, a key mechanism in cancer cell invasion and metastasis. *In vitro* studies in adenocarcinoma cell lines showed reduced Fascin function and impaired cancer cell viability. Additionally, *ex vivo* assays in metastatic colorectal cancer organoids demonstrated strong cytolytic activity. Computational screening confirmed molecular interaction and supported favorable ADME pharmacokinetic properties.

Benefits

- Greater cytolytic and antitumor activity compared to existing Fascin1 inhibitors, enhancing therapeutic effectiveness.
- High specificity for Fascin1, making it a promising option for tumors with overexpression of this target, such as serrated adenocarcinoma.
- Broad applicability across various solid tumors, including colorectal, triple negative breast, and non-small cell lung cancers.
- Chemically synthesized compound with versatile administration routes, facilitating formulation and clinical use.

State of development

TRL-3 Proof of concept

Objective of the collaboration

License and/or co-development

Industrial Property

European patent application

Priority date: 01/08/2024

Contact

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