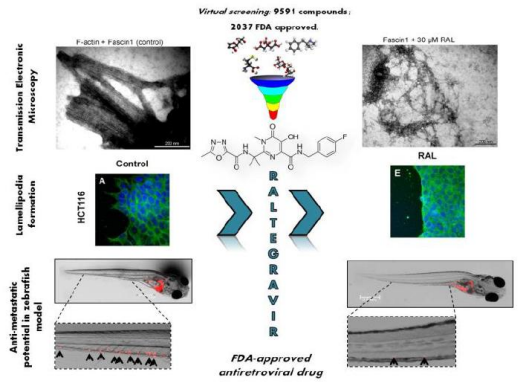
Technology offer IP-007

Raltegravir as an Inhibitor of FASCIN1 for Cancer Treatment

Researchers from IMIB, UCAM, and UGR have identified a new indication for Raltegravir, FDA-approved, for use in cancer treatment through the inhibition of Fascin 1, reducing tumor cell migration and metastasis, particularly in colorectal cancer. This novel mechanism offers a promising therapeutic approach to prevent and treat aggressive cancers with high metastatic potential.



State of development

TRL-4 Laboratory validation

Objective of the collaboration

License and/or co-development

Industrial Property

Granted Spanish patent

Priority date: 26/01/2021

Contact

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Market needs

Colorectal cancer is one of the most common and deadliest cancers worldwide, with limited therapeutic options in advanced stages where surgery is not viable. Fascin 1 plays a key role in metastasis by enabling tumor cells to form protrusions necessary for migration and invasion. Its overexpression is associated with aggressive tumor behavior, higher mortality, and poor prognosis, especially in subtypes like serrated adenocarcinoma. Current treatments such as chemotherapy face challenges like resistance and toxicity. There is a clear need for targeted therapies that can effectively prevent or limit cancer cell invasion and metastasis.

Technical solution from IMIB

Raltegravir is a repurposed drug that acts as a direct inhibitor of Fascin 1, a key protein involved in the formation of cellular protrusions that enable the migration and invasion of tumor cells in cancers with high Fascin 1 expression, such as colorectal cancer and other tumors with overexpression of this protein. *In vitro* studies demonstrated that Raltegravir reduces Fascin 1's ability to organize actin bundles, limiting the development of invasive structures. *In vivo* assays using zebrafish xenograft models showed its anti-migratory and anti-invasive effects, confirming its therapeutic potential.

Benefits

- Targeted action: Inhibits Fascin 1 with high specificity, blocking tumor cell migration and metastasis.
- FDA-approved drug: Raltegravir is already approved, ensuring a known safety profile and faster clinical translation.
- High specificity: Therapeutic effect is strictly dependent on Fascin 1 overexpression.
- Flexible administration: Multiple delivery routes allow adaptation to clinical needs.