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Development of a lead compound targeting USP21 for inhibiting cancer metastasis

KMEDIhub(Daegu-Gyeongbuk Medical Innovation Foundation)

ONCOLOGY | **Candidate**

Product Type	Small molecules product
Indication	Patients diagnosed with metastatic colorectal cancer (mCRC)
Target	Ubiquitin-specific protease 21 (USP21)
MoA(Mechanism of Action)	Fos-related-antigen-1 (Fra-1), member of the activator protein-1 (AP-1) transcription factor superfamily, has an essential role in cancer progress and metastasis. Therefore, Fra-1 is considered a therapeutic target in metastatic cancer including metastatic colorectal cancer (mCRC). Ubiquitin-specific protease 21 (USP21) increases Fra-1 stability by deubiquitinating Fra-1 and enhances the expression of Fra-1 target genes in colon cancer. USP21 enhances Fra-1 stability and AP-1 target gene (matrix metallopeptidase) expression by deubiquitinating Fra-1. Overall, USP21 is considered an attractive therapeutic first-in-class target in mCRC with high Fra-1 expression.
Competitiveness	1. First-in-class drug of USP21 target in metastatic colorectal cancer (mCRC) 2. Small molecule USP21 inhibitor targeting mCRC with novel mode of action and has been developed as anti-cancer metastasis therapeutics
Development Stage	Hit to Lead
Route of Administration	Oral administration

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