# Product data sheet

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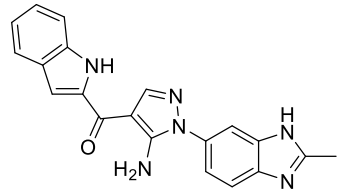
|---|---|
| MedKoo Cat#: 206156<br>Name: Debio-1347<br>CAS#: 1265229-25-1<br>Chemical Formula: $C_{20}H_{16}N_6O$<br>Exact Mass: 356.13856<br>Molecular Weight: 356.38 |  |
| Product supplied as: | Powder |
| Purity (by HPLC): | ≥ 98% |
| Shipping conditions | Ambient temperature |
| Storage conditions: | Powder: -20°C 3 years; 4°C 2 years. |
| | In solvent: -80°C 3 months; -20°C 2 weeks. |

**1. Product description:**

Debio-1347, also known as FF284 and CH5183284, is an orally bioavailable inhibitor of the fibroblast growth factor receptor subtypes 1 (FGFR-1), 2 (FGFR-2) and 3 (FGFR-3), with potential antineoplastic activity. FGFR inhibitor debio 1347 binds to and inhibits FGFR-1, -2, and -3, which result in the inhibition of FGFR-mediated signal transduction pathways. This leads to the inhibition of both tumor cell proliferation and angiogenesis, and causes cell death in FGFR-overexpressing tumor cells.

**2. CoA, QC data, SDS, and handling instruction**

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

**3. Solubility data**

| Solvent | Max Conc. mg/mL | Max Conc. mM |
|---|---|---|
| DMSO | 32.33 | 90.72 |
| DMSO:PBS (pH 7.2) (1:6) | 0.1 | 0.28 |
| DMF | 1.0 | 2.81 |
| Ethanol | 2.0 | 5.61 |

**4. Stock solution preparation table:**

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.81 mL | 14.03 mL | 28.06 mL |
| 5 mM | 0.56 mL | 2.81 mL | 5.61 mL |
| 10 mM | 0.28 mL | 1.40 mL | 2.81 mL |
| 50 mM | 0.06 mL | 0.28 mL | 0.56 mL |

**5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator**

Please refer the product web page under section of "Calculator"

**6. Recommended literature which reported protocols for in vitro and in vivo study**

In vitro study

1. Ebiike H, Taka N, Matsushita M, Ohmori M, Takami K, Hyohdoh I, Kohchi M, Hayase T, Nishii H, Morikami K, Nakanishi Y, Akiyama N, Shindoh H, Ishii N, Isobe T, Matsuoka H. Discovery of [5-Amino-1-(2-methyl-3H-benzimidazol-5-yl)pyrazol-4-yl]-(1H-indol-2-yl)methanone (CH5183284/Debio 1347), An Orally Available and Selective Fibroblast Growth Factor Receptor (FGFR) Inhibitor. J Med Chem. 2016 Dec 8;59(23):10586-10600. doi: 10.1021/acs.jmedchem.6b01156. Epub 2016 Nov 29. PMID: 27933954.
2. Nakanishi Y, Akiyama N, Tsukaguchi T, Fujii T, Sakata K, Sase H, Isobe T, Morikami K, Shindoh H, Mio T, Ebiike H, Taka N, Aoki Y, Ishii N. The fibroblast growth factor receptor genetic status as a potential predictor of the sensitivity to CH5183284/Debio 1347, a novel selective FGFR inhibitor. Mol Cancer Ther. 2014 Nov;13(11):2547-58. doi: 10.1158/1535-7163.MCT-14-0248. Epub 2014 Aug 28. PMID: 25169980.

In vivo study

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1. Ebiike H, Taka N, Matsushita M, Ohmori M, Takami K, Hyohdoh I, Kohchi M, Hayase T, Nishii H, Morikami K, Nakanishi Y, Akiyama N, Shindoh H, Ishii N, Isobe T, Matsuoka H. Discovery of [5-Amino-1-(2-methyl-3H-benzimidazol-5-yl)pyrazol-4-yl]-(1H-indol-2-yl)methanone (CH5183284/Debio 1347), An Orally Available and Selective Fibroblast Growth Factor Receptor (FGFR) Inhibitor. J Med Chem. 2016 Dec 8;59(23):10586-10600. doi: 10.1021/acs.jmedchem.6b01156. Epub 2016 Nov 29. PMID: 27933954.
2. Nakanishi Y, Akiyama N, Tsukaguchi T, Fujii T, Sakata K, Sase H, Isobe T, Morikami K, Shindoh H, Mio T, Ebiike H, Taka N, Aoki Y, Ishii N. The fibroblast growth factor receptor genetic status as a potential predictor of the sensitivity to CH5183284/Debio 1347, a novel selective FGFR inhibitor. Mol Cancer Ther. 2014 Nov;13(11):2547-58. doi: 10.1158/1535-7163.MCT-14-0248. Epub 2014 Aug 28. PMID: 25169980.

**7. Bioactivity**

Biological target:

CH5183284 (Debio 1347) is a FGFR inhibitor with IC50s of 9.3, 7.6, and 22 nM for FGFR1, FGFR2, FGFR3, and FGFR4, respectively.

In vitro activity

Following this rationale, this study predicted that a selectivity of CH5183284/Debio 1347 for FGFR1, FGFR2, and FGFR3 would manifest as a selective activity to cell lines with activating alterations in these FGFRs. To test this, the antiproliferative activity of CH5183284/Debio 1347 was assessed against a large panel of 327 human tumor cell lines that were genetically profiled (Fig. 3; Supplementary Table S3). CH5183284/Debio 1347–sensitive cancer cell lines harboring genetic alterations in FGFR accounted for 20 of 24 (83%) of the lines examined. Together, these data indicate that the FGFR-selective inhibitor CH5183284/Debio 1347 has selective antiproliferative activity against cancer cell lines harboring genetic alterations in FGFR.

Reference: Mol Cancer Ther. 2014 Nov;13(11):2547-58. https://mct.aacrjournals.org/content/13/11/2547.long

In vivo activity

Compound 8 (Debio 1347) was orally administered once daily for 11 days, and the body weight of mice and the volume of the tumors were measured twice a week. A dose-dependent tumor regression (tumor growth inhibition (TGI) = 106% at 30 mg/kg and 147% at 100 mg/kg) was observed without apparent body weight loss. Compound 8 also showed significant in vivo efficacy in xenograft mice models with FGFR genetic alterations, such as KG1 (leukemia, FGFR1OP-FGFR1 fusion), MFE280 (endometrial cancer, FGFR2 S252W mutation), UM-UC-14 (bladder cancer, FGFR3 S249C mutation), and RT112/84 (bladder cancer, FGFR3-TACC3 fusion). These results suggested 8's therapeutic potential of cancers harboring FGFR genetic alterations.

Reference: J Med Chem. 2016 Dec 8;59(23):10586-10600. https://pubmed.ncbi.nlm.nih.gov/27933954/

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*