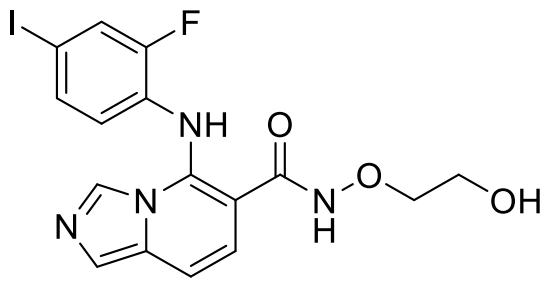
Product data sheet

MedKoo Cat#: 205772 Name: GDC-0623 CAS: 1168091-68-6 Chemical Formula: $C_{16}H_{14}FIN_4O_3$ Exact Mass: 456.00946 Molecular Weight: 456.2159	
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:
GDC-0623, also known as G-868, is an orally active, selective MEK inhibitor with potential antineoplastic activity. MEK inhibitor GDC-0623 specifically inhibits mitogen-activated protein kinase kinase (MEK or MAP/ERK kinase), resulting in inhibition of growth factor-mediated cell signaling and tumor cell proliferation. MEK is a key component of the RAS/RAF/MEK/ERK signaling pathway that regulates cell growth; constitutive activation of this pathway has been implicated in many cancers. Check for active clinical trials or closed clinical trials using this agent. (NCI Thesaurus).

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	70.5	154.53
Ethanol	6.0	13.15

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.19 mL	10.96 mL	21.92 mL
5 mM	0.44 mL	2.19 mL	4.38 mL
10 mM	0.22 mL	1.10 mL	2.19 mL
50 mM	0.04 mL	0.22 mL	0.44 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. Zhang ZQ, Hu XS, Lu YC, Zhang JP, Li WY, Zhang WY, Feng W, Ding DF, Xu JG. MEK1/2 Inhibitor (GDC0623) Promotes Osteogenic Differentiation of Primary Osteoblasts Inhibited by IL-1β through the MEK-Erk1/2 and Jak/Stat3 Pathways. Int J Endocrinol. 2021 Dec 22;2021:5720145. doi: 10.1155/2021/5720145. PMID: 34976051; PMCID: PMC8716208.
2. Zaanan A, Okamoto K, Kawakami H, Khazaie K, Huang S, Sinicrope FA. The Mutant KRAS Gene Up-regulates BCL-XL Protein via STAT3 to Confer Apoptosis Resistance That Is Reversed by BIM Protein Induction and BCL-XL Antagonism. J Biol Chem. 2015 Sep 25;290(39):23838-49. doi: 10.1074/jbc.M115.657833. Epub 2015 Aug 5. PMID: 26245900; PMCID: PMC4583008.

In vivo study
TBD

7. Bioactivity
Biological target:

Product data sheet

GDC-0623 (RG 7421) is a potent, ATP-uncompetitive inhibitor of MEK1 (K_i=0.13 nM, +ATP), and displays 6-fold weaker potency against HCT116 (KRAS (G13D), EC_{50}=42 nM) versus A375 ($BRAF^{V600E}$, EC_{50}=7 nM).

In vitro activity

Compared to the control group, after 7 days of osteogenic induction, ALP staining showed that signals in IL-1β-treated groups were significantly inhibited. However, the ALP signal recovered after GDC0623 treatment (Figure 2(a)). ALP activities were further quantitatively analyzed, showing that ALP activities of osteoblasts in the IL-1β groups were lower than those of the control group. However, ALP activities in osteoblasts significantly recovered after GDC0623 treatment (Figure 2(b)).

Reference: Int J Endocrinol. 2021 Dec 22;2021:5720145. https://pubmed.ncbi.nlm.nih.gov/34976051/

In vivo activity

TBD

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.