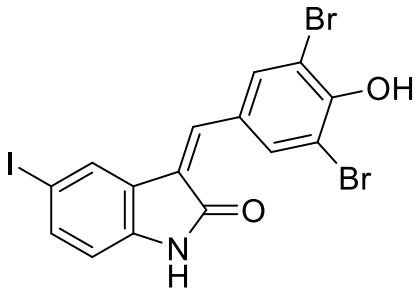
Product data sheet

MedKoo Cat#: 401483 Name: GW5074 CAS: 220904-83-6 Chemical Formula: $C_{15}H_8Br_2INO_2$ Exact Mass: 518.79665 Molecular Weight: 520.9465	
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:
GW5074 is a c-Raf inhibitor. GW5074 has no direct effect on the activities of several apoptosis-associated kinases when assayed in vitro. In contrast to its effect in vitro, treatment of neurons with GW5074 causes c-Raf activation (when measured in vitro in the absence of the drug) and stimulates the Raf-MEK-ERK pathway. GW5074 prevents neurodegeneration and improves behavioral outcome in an animal model of Huntington's disease. GW5074 could have therapeutic value against neurodegenerative pathologies in humans.

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
DMF	15.0	28.79
DMSO	73.0	140.13
DMSO:PBS (pH 7.2) (1:8)	0.1	0.19

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.92 mL	9.60 mL	19.20 mL
5 mM	0.38 mL	1.92 mL	3.84 mL
10 mM	0.19 mL	0.96 mL	1.92 mL
50 mM	0.04 mL	0.19 mL	0.38 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. Johnston T, Hendricks GL, Shen S, Chen RF, Kwon B, Kelso MJ, Kim W, Burgwyn Fuchs B, Mylonakis E. Raf-kinase inhibitor GW5074 shows antibacterial activity against methicillin-resistant Staphylococcus aureus and potentiates the activity of gentamicin. Future Med Chem. 2016 Oct;8(16):1941-1952. doi: 10.4155/fmc-2016-0104. Epub 2016 Sep 21. PMID: 27652456; PMCID: PMC5619112.
2. Chin PC, Liu L, Morrison BE, Siddiq A, Ratan RR, Bottiglieri T, D'Mello SR. The c-Raf inhibitor GW5074 provides neuroprotection in vitro and in an animal model of neurodegeneration through a MEK-ERK and Akt-independent mechanism. J Neurochem. 2004 Aug;90(3):595-608. doi: 10.1111/j.1471-4159.2004.02530.x. PMID: 15255937.

In vivo study

1. Johnston T, Hendricks GL, Shen S, Chen RF, Kwon B, Kelso MJ, Kim W, Burgwyn Fuchs B, Mylonakis E. Raf-kinase inhibitor GW5074 shows antibacterial activity against methicillin-resistant Staphylococcus aureus and potentiates the activity of gentamicin.

Product data sheet

Future Med Chem. 2016 Oct;8(16):1941-1952. doi: 10.4155/fmc-2016-0104. Epub 2016 Sep 21. PMID: 27652456; PMCID: PMC5619112.
2. Chin PC, Liu L, Morrison BE, Siddiq A, Ratan RR, Bottiglieri T, D'Mello SR. The c-Raf inhibitor GW5074 provides neuroprotection in vitro and in an animal model of neurodegeneration through a MEK-ERK and Akt-independent mechanism. J Neurochem. 2004 Aug;90(3):595-608. doi: 10.1111/j.1471-4159.2004.02530.x. PMID: 15255937.

7. Bioactivity

Biological target:

GW 5074 is a potent and selective c-Raf inhibitor with IC_{50} of 9 nM, and has no effect on the activities of JNK1/2/3, MEK1, MKK6/7, CDK1/2, c-Src, p38 MAP, VEGFR2 or c-Fms.

In vitro activity

These studies showed that GW5074 exhibited selective antimicrobial activity toward Gram-positive micro-organisms with MICs ranging from 2 to 8 μg/ml, compared with the >64 μg/ml for all Gram-negative bacteria tested (Tables 2 & 3).

Reference: Future Med Chem. 2016 Oct;8(16):1941-1952. https://pubmed.ncbi.nlm.nih.gov/27652456/

In vivo activity

As shown in Fig. 10 (top panel), mice administered 3-NP display extensive bilateral striatal lesions. This degeneration is completely prevented by GW5074 when administered at a concentration of 5 mg/kg body weight. Administration of GW5074 alone had no discernible effect on the animals as judged by behavior and cell morphology of brain sections (data not shown).

Reference: Neurochem. 2004 Aug;90(3):595-608. https://pubmed.ncbi.nlm.nih.gov/15255937/