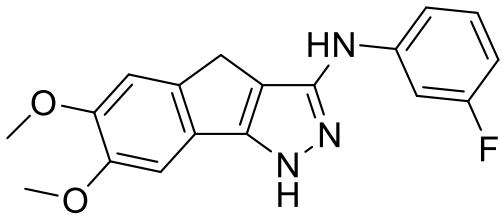
Product data sheet

MedKoo Cat#: 407889 Name: JNJ-10198409 CAS#: 627518-40-5 Chemical Formula: $C_{18}H_{16}FN_3O_2$ Exact Mass: 325.1227 Molecular Weight: 325.3434	
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:
JNJ-10198409, also known as RWJ-540973, is an inhibitor of PDGF-BB tyrosine kinase with an IC50 value of 4.2 nM. JNJ-10198409 is a competitive antagonist of the ATP binding and hydrolysis at this receptor, resulting in a dose dependent inhibition of tumor growth and angiogenesis.

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	6.51	20.0

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.07 mL	15.37 mL	30.74 mL
5 mM	0.61 mL	3.07 mL	6.15 mL
10 mM	0.31 mL	1.54 mL	3.07 mL
50 mM	0.06 mL	0.31 mL	0.61 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. Danovi D, Folarin A, Gogolok S, Ender C, Elbatsh AM, Engström PG, Stricker SH, Gagrica S, Georgian A, Yu D, U KP, Harvey KJ, Ferretti P, Paddison PJ, Preston JE, Abbott NJ, Bertone P, Smith A, Pollard SM. A high-content small molecule screen identifies sensitivity of glioblastoma stem cells to inhibition of polo-like kinase 1. PLoS One. 2013 Oct 30;8(10):e77053. doi: 10.1371/journal.pone.0077053. PMID: 24204733; PMCID: PMC3813721.
2. Ho CY, Ludovici DW, Maharoof US, Mei J, Sechler JL, Tuman RW, Strobel ED, Andraka L, Yen HK, Leo G, Li J, Almond H, Lu H, DeVine A, Tominovich RM, Baker J, Emanuel S, Gruninger RH, Middleton SA, Johnson DL, Galemmo RA Jr. (6,7-Dimethoxy-2,4-dihydroindeno[1,2-c]pyrazol-3-yl)phenylamines: platelet-derived growth factor receptor tyrosine kinase inhibitors with broad antiproliferative activity against tumor cells. J Med Chem. 2005 Dec 29;48(26):8163-73. doi: 10.1021/jm050680m. PMID: 16366598.

In vivo study

1. D'Andrea MR, Mei JM, Tuman RW, Galemmo RA, Johnson DL. Validation of in vivo pharmacodynamic activity of a novel PDGF receptor tyrosine kinase inhibitor using immunohistochemistry and quantitative image analysis. Mol Cancer Ther. 2005 Aug;4(8):1198-204. doi: 10.1158/1535-7163.MCT-05-0004. PMID: 16093435.

7. Bioactivity
Biological target:

Product data sheet

JNJ-10198409 is a relatively selective, orally active, and ATP competitive PDGF-RTK (platelet-derived growth factor receptor tyrosine kinase) inhibitor (IC_{50}=2 nM). JNJ-10198409 has good activity against PDGFR-β kinase (IC_{50}=4.2 nM) and PDGFR-α kinase (IC_{50}=45 nM).

In vitro activity

JNJ-10198402 (J101) was confirmed as blocking cell proliferation in GNS cells, as no increases in total cell number were recorded. Surprisingly however, J101 was found to induce a ~7-fold increase in the numbers of mitotic objects scored during a two-day period compared to DMSO controls (Figure 2B). The increase in cells undergoing mitosis without a concomitant increase in total cell numbers (Figure 2C) suggested that mitotic arrest might be triggered in GNS cultures, but not NS cells, following J101 exposure.

Reference: PLoS One. 2013 Oct 30;8(10):e77053. https://pubmed.ncbi.nlm.nih.gov/24204733/

In vivo activity

Hence, this study investigated the in vivo pharmacodynamic activity of JNJ-10198409, a relatively selective inhibitor of platelet-derived growth factor receptor tyrosine kinase (PDGF-RTK), in tumor tissues after administering the compound orally in a nude mouse xenograft model of human LoVo colon cancer. Computer-assisted image analysis was then used to directly compare the ratio of ph-PLCgamma1 to pan-PLCgamma1 immunolabeling intensities in serial sections (5 mum) of tumors obtained from vehicle- and JNJ-10198409-treated tumor-bearing mice. This data showed statistically significant, dose-dependent differences in the ph-PLC/pan-PLC ratio among the four treatment groups (vehicle, 25, 50, and 100 mg/kg b.i.d.). These results confirmed this compound's ability to suppress PDGF-RTK downstream signaling in tumor tissues in vivo.

Reference: Mol Cancer Ther. 2005 Aug;4(8):1198-204. https://pubmed.ncbi.nlm.nih.gov/16093435/

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.