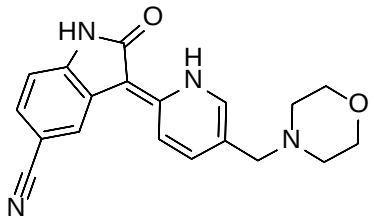
Product data sheet

MedKoo Cat#: 407113 Name: AZD-1080 CAS#: 612487-72-6 Chemical Formula: $C_{19}H_{18}N_4O_2$ Exact Mass: 334.1430 Molecular Weight: 334.38	
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:
AZD-1080 is a potent and selective GSK3 inhibitor that demonstrates peripheral target engagement in Phase 1 clinical studies. AZD1080 inhibits tau phosphorylation in cells expressing human tau and in intact rat brain. Interestingly, subchronic but not acute administration with AZD1080 reverses MK-801-induced deficits, measured by long-term potentiation in hippocampal slices and in a cognitive test in mice, suggesting that reversal of synaptic plasticity deficits in dysfunctional systems requires longer term modifications of proteins downstream of GSK3β signaling.

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	25.0	74.77
DMSO	31.12	93.07
DMSO:PBS (pH 7.2) (1:1)	0.50	1.50
Ethanol	0.25	0.75

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.99 mL	14.95 mL	29.91 mL
5 mM	0.60 mL	2.99 mL	5.98 mL
10 mM	0.30 mL	1.50 mL	2.99 mL
50 mM	0.06 mL	0.30 mL	0.60 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. Chen S, Sun KX, Feng MX, Sang XB, Liu BL, Zhao Y. Role of glycogen synthase kinase-3β inhibitor AZD1080 in ovarian cancer. Drug Des Devel Ther. 2016 Mar 18;10:1225-32. doi: 10.2147/DDDT.S102506. PMID: 27051274; PMCID: PMC4807899.

In vivo study

1. Hu S, Hu M, Liu J, Zhang B, Zhang Z, Zhou FH, Wang L, Dong J. Phosphorylation of Tau and α-Synuclein Induced Neurodegeneration in MPTP Mouse Model of Parkinson's Disease. Neuropsychiatr Dis Treat. 2020 Mar 4;16:651-663. doi: 10.2147/NDT.S235562. PMID: 32184604; PMCID: PMC7061418.

7. Bioactivity
Biological target: AZD1080 is a GSK3 inhibitor with IC50s of 6.9 nM and 31 nM for recombinant human GSK3α and GSK3β, respectively.

Product data sheet

In vitro activity

AZD1080 exposure suppressed ovarian cancer cell proliferation, invasion, migration, and lamellipodia formation, and induced G1 arrest, which was concentration dependent. AZD1080 also significantly downregulated GSK-3β, CDK2, CDK1, cyclin D1, MMP9, and Bcl-xL expression at both mRNA and protein levels.

Reference: Drug Des Devel Ther. 2016 Mar 18;10:1225-32. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4807899/

In vivo activity

The rotarod test, static rod test and pole were used to test the motor function of the PD (Parkinson's disease) mice. The rotarod test showed MPTP induced a significant loss of latency to fall from the rotarod, and AZD 1080 rescued the time loss induced by MPTP (Figure 8A). MPTP induced an increase in the orientation time and transition time in the static rod test. AZD 1080 shortened the orientation time and transition time compared to the MPTP group (Figure 8B). MPTP increased the time of moving down along the pole. AZD 1080 reversed the increase in the time of moving down induced by MPTP in the pole test (Figure 8C).

Reference: Neuropsychiatr Dis Treat. 2020 Mar 4;16:651-663. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7061418/

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.