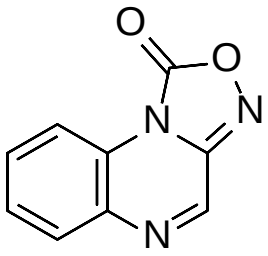
Product data sheet

MedKoo Cat#: 561513 Name: ODQ inhibitor CAS: 41443-28-1 Chemical Formula: $C_9H_5N_3O_2$ Exact Mass: 187.0382 Molecular Weight: 187.158	
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:
ODQ potent and selective inhibitor of soluble guanylyl cyclase (sGC). The binding of ODQ is competitive with NO.

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	30.0	160.29
DMF:PBS (pH 7.2) (1:1)	0.1	0.53
DMSO	42.68	228.04
Ethanol	0.5	2.67

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	5.34 mL	26.72 mL	53.43 mL
5 mM	1.07 mL	5.34 mL	10.69 mL
10 mM	0.53 mL	2.67 mL	5.34 mL
50 mM	0.11 mL	0.53 mL	1.07 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. Haramis G, Zhou Z, Pyriochou A, Koutsilieris M, Roussos C, Papapetropoulos A. cGMP-independent anti-tumour actions of the inhibitor of soluble guanylyl cyclase, ODQ, in prostate cancer cell lines. Br J Pharmacol. 2008 Nov;155(6):804-13. doi: 10.1038/bjp.2008.312. Epub 2008 Aug 11. PMID: 18695639; PMCID: PMC2597233.
2. Garthwaite J, Southam E, Boulton CL, Nielsen EB, Schmidt K, Mayer B. Potent and selective inhibition of nitric oxide-sensitive guanylyl cyclase by 1H-[1,2,4]oxadiazolo[4,3-a]quinoxalin-1-one. Mol Pharmacol. 1995 Aug;48(2):184-8. PMID: 7544433.

In vivo study

1. Zacharowski K, Berkels R, Olbrich A, Chatterjee PK, Cuzzocrea S, Foster SJ, Thiemermann C. The selective guanylate cyclase inhibitor ODQ reduces multiple organ injury in rodent models of Gram-positive and Gram-negative shock. Crit Care Med. 2001 Aug;29(8):1599-608. doi: 10.1097/00003246-200108000-00017. PMID: 11505136.
2. Fedele E, Jin Y, Varnier G, Raiteri M. In vivo microdialysis study of a specific inhibitor of soluble guanylyl cyclase on the glutamate receptor/nitric oxide/cyclic GMP pathway. Br J Pharmacol. 1996 Oct;119(3):590-4. doi: 10.1111/j.1476-5381.1996.tb15713.x. PMID: 8894183; PMCID: PMC1915716.

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7. Bioactivity

Biological target:

ODQ is a potent and selective soluble guanylyl cyclase (sGC, nitric oxide-activated enzyme) inhibitor.

In vitro activity

This study identified a compound, 1H-[1,2,4]oxadiazolo[4,3-a]quinoxalin-1-one (ODQ), that potently and selectively inhibits NO-stimulated guanylyl cyclase activity. In incubated slices of cerebellum, ODQ reversibly inhibited the NO-dependent cGMP response to glutamate receptor agonists (IC50 approximately nM) but did not affect NO synthase activity.

Reference: Mol Pharmacol. 1995 Aug;48(2):184-8. https://pubmed.ncbi.nlm.nih.gov/7544433/

In vivo activity

In vivo, administration of lipoteichoic acid/peptidoglycan or lipopolysaccharide resulted within 6 hrs in hypotension, acute renal dysfunction, hepatocellular injury, and lung injury. Pretreatment of rats with ODQ attenuated the renal dysfunction, lung injury, and hepatocellular injury caused by lipoteichoic acid/peptidoglycan or lipopolysaccharide.

Reference: Crit Care Med. 2001 Aug;29(8):1599-608. https://pubmed.ncbi.nlm.nih.gov/11505136/

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.