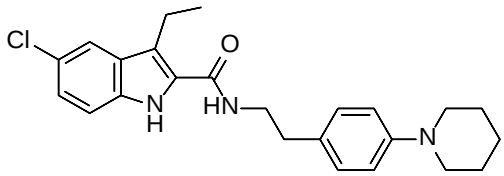
Product data sheet

MedKoo Cat#: 510212 Name: ORG-27569 CAS: 868273-06-7 Chemical Formula: $C_{24}H_{28}ClN_3O$ Exact Mass: 409.1921 Molecular Weight: 409.958	
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:
ORG-27569 is a drug which acts as a potent and selective allosteric modulator of the cannabinoid CB1 receptor. Studies in vitro suggest that it binds to a regulatory site on the CB1 receptor target, causing a conformational change that increases the binding affinity of CB1 agonists such as CP 55,940, while decreasing the binding affinity of CB1 antagonists or inverse agonists such as rimonabant. However while Org 27569 increases the ability of CB1 agonists to bind to the receptor, it decreases their efficacy at stimulating second messenger signalling once bound, and so in practice behaves as an insurmountable antagonist of CB1 receptor function. (source: http://en.wikipedia.org/wiki/Org_27569).

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	58.40	142.45

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.44 mL	12.20 mL	24.39 mL
5 mM	0.49 mL	2.44 mL	4.88 mL
10 mM	0.24 mL	1.22 mL	2.44 mL
50 mM	0.05 mL	0.24 mL	0.49 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. Fay JF, Farrens DL. A key agonist-induced conformational change in the cannabinoid receptor CB1 is blocked by the allosteric ligand Org 27569. J Biol Chem. 2012 Sep 28;287(40):33873-82. doi: 10.1074/jbc.M112.352328. Epub 2012 Jul 30. PMID: 22846992; PMCID: PMC3460482.
2. Ahn KH, Mahmoud MM, Kendall DA. Allosteric modulator ORG27569 induces CB1 cannabinoid receptor high affinity agonist binding state, receptor internalization, and Gi protein-independent ERK1/2 kinase activation. J Biol Chem. 2012 Apr 6;287(15):12070-82. doi: 10.1074/jbc.M111.316463. Epub 2012 Feb 16. PMID: 22343625; PMCID: PMC3320953.

In vivo study

1. Jing L, Qiu Y, Zhang Y, Li JX. Effects of the cannabinoid CB_1 receptor allosteric modulator ORG 27569 on reinstatement of cocaine- and methamphetamine-seeking behavior in rats. Drug Alcohol Depend. 2014 Oct 1;143:251-6. doi: 10.1016/j.drugalcdep.2014.08.004. Epub 2014 Aug 17. PMID: 25169627; PMCID: PMC4161648.

Product data sheet

2. Gamage TF, Ignatowska-Jankowska BM, Wiley JL, Abdelrahman M, Trembleau L, Greig IR, Thakur GA, Tichkule R, Poklis J, Ross RA, Pertwee RG, Lichtman AH. In-vivo pharmacological evaluation of the CB1-receptor allosteric modulator Org-27569. Behav Pharmacol. 2014 Apr;25(2):182-5. doi: 10.1097/FBP.0000000000000027. PMID: 24603340; PMCID: PMC4042670.

7. Bioactivity

Biological target:

Org 27569 is a potent CB1 receptor allosteric modulator.

In vitro activity

An allosteric ligand for the cannabinoid receptor CB1, Org 27569, exhibits an intriguing effect; it increases agonist binding, yet blocks agonist-induced CB1 signaling. Here this study explored the mechanism behind this behavior, using a site-directed fluorescence labeling approach. These results show that Org 27569 blocks conformational changes in CB1 that accompany G protein binding and/or activation, and thus inhibit formation of a fully active CB1 structure. The underlying mechanism behind this behavior is that simultaneous binding of Org 27569 produces a unique agonist-bound conformation, one that may resemble an intermediate structure formed on the pathway to full receptor activation.

Reference: J Biol Chem. 2012 Sep 28;287(40):33873-82. https://pubmed.ncbi.nlm.nih.gov/22846992/

In vivo activity

On reinstatement test sessions, rats were administered ORG27569 (1.0, 3.2, 5.6 mg/kg, i.p.) or SR141716A (3.2 mg/kg, i.p.) 10 min prior to re-exposure to cocaine- or methamphetamine-paired cues or a priming injection of cocaine (10mg/kg, i.p.) or methamphetamine (1mg/kg, i.p.). Pretreatment with ORG27569 resulted in a dose-related attenuation of both cue- and drug-induced reinstatement of cocaine- and methamphetamine-seeking behavior.

Reference: Drug Alcohol Depend. 2014 Oct 1;143:251-6. https://pubmed.ncbi.nlm.nih.gov/25169627/

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.