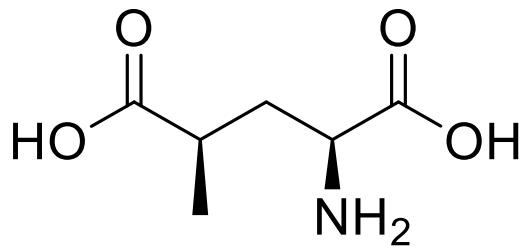
Product data sheet

MedKoo Cat#: 532799 Name: SYM2081 CAS#: 31137-74-3 Chemical Formula: $C_6H_{11}NO_4$ Exact Mass: 161.0688 Molecular Weight: 161.16	
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:

SYM2081 is a potent and highly selective kainate receptor agonist, with an IC50 for inhibition of [3H]-kainate binding of 35 nM and almost 3,000- and 200-fold selectivity for kainate receptors over AMPA and NMDA receptors respectively. SYM2081 also selectively inhibits the cloned excitatory amino acid transporter EAAT2 at higher concentrations.

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
Water	50	310.25

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	6.21 mL	31.03 mL	62.05 mL
5 mM	1.24 mL	6.21 mL	12.41 mL
10 mM	0.62 mL	3.10 mL	6.21 mL
50 mM	0.12 mL	0.62 mL	1.24 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. Mascias P, Scheede M, Bloms-Funke P, Chizh B. Modulation of spinal nociception by GluR5 kainate receptor ligands in acute and hyperalgesic states and the role of gabaergic mechanisms. Neuropharmacology. 2002 Sep;43(3):327-39. doi: 10.1016/s0028-3908(02)00112-0. PMID: 12243762.

In vivo study

1. Slattery JA, Page AJ, Dorian CL, Brierley SM, Blackshaw LA. Potentiation of mouse vagal afferent mechanosensitivity by ionotropic and metabotropic glutamate receptors. J Physiol. 2006 Nov 15;577(Pt 1):295-306. doi: 10.1113/jphysiol.2006.117762. Epub 2006 Aug 31. PMID: 16945965; PMCID: PMC2000674.
2. Stoffel W, Körner R, Wachtmann D, Keller BU. Functional analysis of glutamate transporters in excitatory synaptic transmission of GLAST1 and GLAST1/EAAC1 deficient mice. Brain Res Mol Brain Res. 2004 Sep 28;128(2):170-81. doi: 10.1016/j.molbrainres.2004.06.026. PMID: 15363892.

7. Bioactivity

Biological target:

SYM2081 is a selective agonist of kainate receptors. It inhibits [3H]-kainate binding with an IC50 of 35 nM, almost 3000- and 200-fold selectivity for kainate receptors over AMPA and NMDA receptors respectively.

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In vitro activity

This study investigated several GluR5 ligands in acute and hyperalgesic states. In hemisected spinal cords in vitro, SYM2081 was inactive.

Reference: Neuropharmacology. 2002 Sep;43(3):327-39. https://pubmed.ncbi.nlm.nih.gov/12243762/

In vivo activity

The responses of mouse gastro-oesophageal vagal afferents to graded mechanical stimuli were investigated before and during application of selective GluR ligands to their peripheral endings. SYM-2081 had minor effects on mechanosensitivity, and the antagonist UBP 302 was ineffective.

Reference: J Physiol. 2006 Nov 15;577(Pt 1):295-306. https://pubmed.ncbi.nlm.nih.gov/16945965/

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.