

# Product data sheet



MedKoo Cat#: 525586 Name: LY-404187 CAS: 211311-95-4 Chemical Formula: C <sub>19</sub> H <sub>22</sub> N <sub>2</sub> O <sub>2</sub> S Exact Mass: 342.1402 Molecular Weight: 342.457	
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:

LY-404187 is an ampakine, AMPA receptor potentiator. LY-404187 has been demonstrated to enhance cognitive function in animal studies, and has also shown effects suggesting antidepressant action as well as having possible application in the treatment of schizophrenia, Parkinson's disease and ADHD. These effects appear to be mediated through multiple mechanisms of action secondary to AMPA receptor potentiation, with a prominent effect seen in research being increased levels of BDNF in the brain.

## 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	67.13	196.01
Ethanol	17.12	49.99

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.92 mL	14.60 mL	29.20 mL
5 mM	0.58 mL	2.92 mL	5.84 mL
10 mM	0.29 mL	1.46 mL	2.92 mL
50 mM	0.06 mL	0.29 mL	0.58 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. Voss OP, Milne S, Sharkey J, O'Neill MJ, McCulloch J. Molecular mechanisms of neurite growth with AMPA receptor potentiation. *Neuropharmacology*. 2007 Feb;52(2):590-7. doi: 10.1016/j.neuropharm.2006.09.001. Epub 2006 Nov 13. PMID: 17101156.
2. Baumbarger PJ, Muhlhauser M, Zhai J, Yang CR, Nisenbaum ES. Positive modulation of alpha-amino-3-hydroxy-5-methyl-4-isoxazole propionic acid (AMPA) receptors in prefrontal cortical pyramidal neurons by a novel allosteric potentiator. *J Pharmacol Exp Ther*. 2001 Jul;298(1):86-102. PMID: 11408529.

### In vivo study

1. Song B, Lee S, Choi S. LY404187, a potentiator of AMPARs, enhances both the amplitude and 1/CV<sup>2</sup> of AMPA EPSCs but not NMDA EPSCs at CA3-CA1 synapses in the hippocampus of neonatal rats. *Neurosci Lett*. 2012 Dec 7;531(2):193-7. doi: 10.1016/j.neulet.2012.10.020. Epub 2012 Oct 26. PMID: 23103715.
2. O'Neill MJ, Murray TK, Whalley K, Ward MA, Hicks CA, Woodhouse S, Osborne DJ, Skolnick P. Neurotrophic actions of the novel AMPA receptor potentiator, LY404187, in rodent models of Parkinson's disease. *Eur J Pharmacol*. 2004 Feb 20;486(2):163-74. doi: 10.1016/j.ejphar.2003.12.023. PMID: 14975705.

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## 7. Bioactivity

### Biological target:

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LY-404187 is a potent, selective and centrally active positive allosteric modulator of AMPA receptors, with the EC<sub>50</sub>s of 5.65, 0.15, 1.44, 1.66 and 0.21  $\mu$ M for GluR1i, GluR2i, GluR2o, GluR3i and GluR4i.

### In vitro activity

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Using a strategy of combined morphological and biochemical analyses, this study investigated the effect of the AMPA receptor potentiator LY404187 on neurite growth in the SH-SY5Y human neuroblastoma cell line. LY404187 (0.1-10  $\mu$ M) increased average neurite length and neurofilament expression when co-administered with s-AMPA. Antibody sequestration of BDNF attenuated neurite growth following AMPA receptor potentiator administration, suggesting that LY404187 increases neurite length in vitro by a BDNF mediated mechanism.

Reference: Neuropharmacology. 2007 Feb;52(2):590-7. <https://pubmed.ncbi.nlm.nih.gov/17101156/>

### In vivo activity

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The present study reports that the potent and selective AMPA receptor potentiator, R,S-N-2-(4-(4-Cyanophenyl)phenyl)propyl 2-propanesulfonamide (LY404187), provides both functional, neurochemical and histological protection against unilateral infusion of 6-hydroxydopamine into the substantia nigra or striatum of rats. In addition, LY404187 provided a dose-dependent increase in growth-associated protein-43 expression in the striatum.

Reference: Eur J Pharmacol. 2004 Feb 20;486(2):163-74. <https://pubmed.ncbi.nlm.nih.gov/14975705/>

*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.*