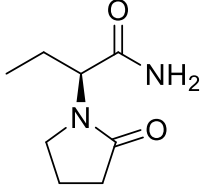


Product data sheet



MedKoo Cat#: 318094 Name: Levetiracetam CAS#: 102767-28-2 Chemical Formula: C ₈ H ₁₄ N ₂ O ₂ Exact Mass: 170.1055 Molecular Weight: 170.209	
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:

Levetiracetam is a medication used to treat epilepsy. It is the S-enantiomer of etiracetam. Levetiracetam is used for partial onset, myoclonic, or tonic-clonic seizures.

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	39.0	229.13
DMF	20.0	117.50
Ethanol	25.35	148.93
PBS (pH 7.2)	10.0	58.75
Water	45.34	266.38

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	5.88 mL	29.38 mL	58.75 mL
5 mM	1.18 mL	5.88 mL	11.75 mL
10 mM	0.59 mL	2.94 mL	5.88 mL
50 mM	0.12 mL	0.59 mL	1.18 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. Sulstent R, Frossi B, Bongiovanni L, Cancila V, Ostano P, Fischetti I, Enriquez C, Guana F, Chiorino G, Tripodo C, Pucillo CE, Colombo MP, Jachetti E. Repurposing of the Antiepileptic Drug Levetiracetam to Restrain Neuroendocrine Prostate Cancer and Inhibit Mast Cell Support to Adenocarcinoma. *Front Immunol.* 2021 Mar 2;12:622001. doi: 10.3389/fimmu.2021.622001. PMID: 33737929; PMCID: PMC7960782.

In vivo study

1. Yao X, Yang W, Ren Z, Zhang H, Shi D, Li Y, Yu Z, Guo Q, Yang G, Gu Y, Zhao H, Ren K. Neuroprotective and Angiogenesis Effects of Levetiracetam Following Ischemic Stroke in Rats. *Front Pharmacol.* 2021 May 14;12:638209. doi: 10.3389/fphar.2021.638209. PMID: 34054520; PMCID: PMC8161206.

7. Bioactivity

Biological target:

Levetiracetam (UCB L059) is a selective M2 muscarinic acetylcholine receptors (mAChR) inhibitor.

Product data sheet



In vitro activity

MCs can release several soluble mediators by granule exocytosis in response to activation, this study tested whether levetiracetam hampered this function in BMMCs subjected to different stimuli. Notably, this drug significantly inhibited the release of beta-hexosaminidase in both IgE/Ag- and Ionomycin-activated BMMCs, in a concentration dependent manner (Figure 4B). Moreover, levetiracetam decreased the IgE/Ag crosslink-mediated release of newly formed lipid mediators as demonstrated by the reduced amounts of leukotrienes C4, D4, and E4 measured in cell supernatants.

Reference: Front Immunol. 2021; 12: 622001. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7960782/>

In vivo activity

To evaluate the effect of LEV (Levetiracetam) on the surviving neurons and the functional state of the brain, the Morris water maze was used to assess learning and memory in the rats. The rats in the control group reached the hidden platform in a short time during training. In contrast, rats in the saline group showed obvious functional defects. The time required to reach the platform for LEV-treated rats was shorter than that in the saline group but not differ from that of the control group (Figure 4A). On day 14 after MACO (middle cerebral artery occlusion), the time the rats were able to stay on the accelerating rotarod was significantly shortened (Figure 4B). LEV treatment after ischemia effectively improved this motor function defect by prolonging the rotarod retention time.

Reference: Front Pharmacol. 2021; 12: 638209. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8161206/>

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.