



## Product Information

Product ID L1784  
CAS No. 102767-28-2  
Chemical Name 2(S)-(2-oxopyrrolidin-1-yl)butyramide

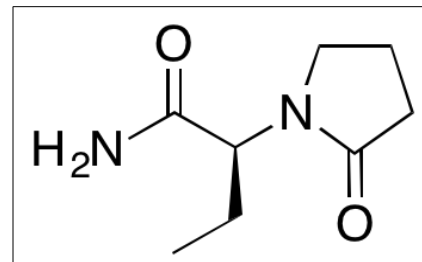
### Synonym

Formula  $C_8H_{14}N_2O_2$   
Formula Wt. 170.21  
Melting Point  $117^{\circ}C$   
Purity  $\geq 98\%$   
Solubility Soluble in DMSO, water, and ethanol, all to 34mg/mL

Store Temp Ambient

Ship Temp Ambient

**Description** Levetiracetam is clinically used to treat a wide variety of seizure disorders, including partial, myoclonic, and tonic-clonic seizures as well as mood and psychiatric disorders such as anxiety, autism, and Tourette's syndrome. Levetiracetam displays anticonvulsant/antiepileptic, neuromodulatory, anxiolytic, and cognition enhancing activities. Levetiracetam binds to synaptic vesicle glycoprotein SV2A, a membrane glycoprotein common to all synaptic and endocrine vesicles. SV2A plays a role in  $Ca^{2+}$ -induced vesicle fusion, action potential proliferation, normal CNS function, and survival. Altering SV2A function inhibits presynaptic  $Ca^{2+}$  release, reduces excitatory postsynaptic potentials, and inhibits synaptic transmission. This compound is also under examination as a potential treatment for Alzheimer's disease, as it reduces memory and learning deficits, synaptic dysfunction, and hippocampal remodeling in a transgenic murine model of the disease.



**Bulk quantities available upon request**

Product ID	Size
L1784	100 mg
L1784	250 mg
L1784	1 g

**References** Vogl C, Mochida S, Wolff C, et al. The synaptic vesicle glycoprotein 2A ligand levetiracetam inhibits presynaptic  $Ca^{2+}$  channels through an intracellular pathway. *Mol Pharmacol*. 2012 Aug;82(2):199-208. PMID: 22554805.

Sanchez PE, Zhu L, Verret L, et al. Levetiracetam suppresses neuronal network dysfunction and reverses synaptic and cognitive deficits in an Alzheimer's disease model. *Proc Natl Acad Sci U S A*. 2012 Oct 16;109(42):E2895-903. PMID: 22869752.

Farooq MU, Bhatt A, Majid A, et al. Levetiracetam for managing neurologic and psychiatric disorders. *Am J Health Syst Pharm*. 2009 Mar 15;66(6):541-61. PMID: 19265183.

Lynch BA, Lambeng N, Nocka K, et al. The synaptic vesicle protein SV2A is the binding site for the antiepileptic drug levetiracetam. *Proc Natl Acad Sci U S A*. 2004 Jun 29;101(26):9861-6. PMID: 15210974.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.