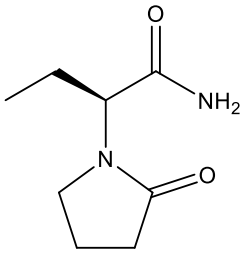
Catalog # 10-2040

Levetiracetam

CAS# 102767-28-2

2(S)-(2-Oxopyrrolidin-1-yl)butyramide

Lot # FBS2025



Levetiracetam is a clinically useful non-classical anticonvulsant.[1] It has no effect on voltage-dependent Na^+ channels, GABAergic transmission, or affinity for either GABAergic or glutaminergic receptors.[2,3] Levetiracetam is believed to act via binding to the synaptic vesicle protein SV2A.[4] Levetiracetam reduced intra-neuronal Ca^{2+} levels by inhibition of ryanodine and IP3 receptor-dependent Ca^{2+} release from the endoplasmic reticulum.[5] It was also observed to lower the pH of neocortical pyramidal cells via weakening of the transmembrane $HCO3^{(-)}$-mediated acid-extrusion.[6]

1) Wright *et al.* (2013) *Clinical Pharmacology and Pharmacokinetics of Levetiracetam;* Front. Neurol. **4** 192
2) De Smedt *et al.* (2007) *Levetiracetam: the profile of a novel anticonvulsant drug – part I: preclinical data;* CNS Drug Rev. **13** 43
3) Klitgaard and Verdru (2007) *Levetiracetam: the first SV2A ligand for the treatment of epilepsy;* Drug Discov. **2** 1537
4) Lynch *et al.* (2004) *The synaptic vesicle protein SV2A is the binding site for the antiepileptic drug levetiracetam;* Proc. Natl. Acad. Sci. USA **101** 9861
5) Nagarkatti *et al.* (2008) *Levetiracetam inhibits both ryanodine and IP3 receptor activated calcium induced calcium release in hippocampal neurons in culture;* Neurosci. Lett. **436** 289
6) Bonnet *et al.* (2019) *Levetiracetam mediates subtle pH-shifts in adult human pyramidal cells via an inhibition of the bicarbonate-driven neuronal pH-regulation – Implications for excitability and plasticity modulation;* Brain Res. **1710** 146

PHYSICAL DATA

Molecular Weight:	170.21
Molecular Formula:	$C_{29}H_{14}N_2O_2$
Purity:	>98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (>25 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20ºC for up to 1 year from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 1 month.

Focus Biomolecules LLC 400 Davis Drive, Suite 600 Plymouth Meeting PA 19462

www.focusbiomolecules.com