

Gabapentin (hydrochloride)

Catalog No: tcsc1636



Available Sizes

Size: 10mg

Size: 50mg

Size: 100mg



Specifications

CAS No:

60142-95-2

Formula:

$C_9H_{18}ClNO_2$

Pathway:

Membrane Transporter/Ion Channel

Target:

Calcium Channel

Purity / Grade:

>98%

Solubility:

10 mM in DMSO

Observed Molecular Weight:

207.7

Product Description

Gabapentin (Neurontin) is a pharmaceutical drug, specifically a GABA analog. It was originally developed to treat epilepsy, and currently is also used to relieve neuropathic pain.

IC50 Value: 140 nM ($\alpha 2\delta$ subunit of calcium channel) [1]

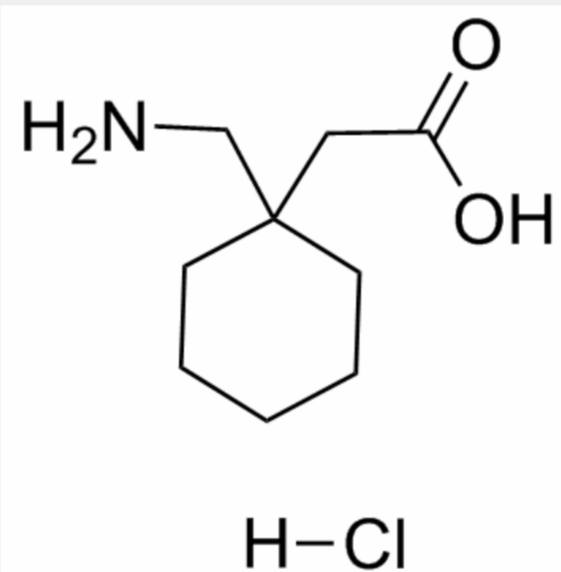
Target: Calcium Channel

in vitro: Gabapentin, baclofen and CGP 44532 all reduced the electrically stimulated release of [3H]glutamic acid (IC₅₀=20 μ M, 0.8 μ M and 2 μ M, respectively). Gabapentin was without effect on the release of [3H]GABA, whilst baclofen (IC₅₀=8 μ M) and CGP 44532 (IC₅₀=1 μ M) inhibited [3H]GABA release [2]. A large inhibition of calcium currents by gabapentin was observed in pyramidal neocortical cells (up to 34%). Significantly, the gabapentin-mediated inhibition of calcium currents saturated at particularly low concentrations (around 10 μ M), at least in neocortical neurons (IC₅₀ about 4 μ M) [3].

in vivo: Gabapentin produced an anti-allodynic effect over the 7-day period, reducing the expression of pro-inflammatory cytokines but increasing the expression of IL-10 (TNF- α , 316.0 \pm 69.7 pg/mL vs 88.8 \pm 24.4 pg/mL; IL-1 β , 1,212.9 \pm 104.5 vs 577.4 \pm 97.1 pg/mL; IL-6, 254.0 \pm 64.8 pg/mL vs 125.5 \pm 44.1 pg/mL; IL-10, 532.1 \pm 78.7 pg/mL vs 918.9 \pm 63.1 pg/mL). The suppressive effect of gabapentin on pro-inflammatory cytokine expression was partially blocked by the anti-IL-10 antibody [4].

Toxicity: No new safety signals or adverse event trends relating to GEn exposure were identified [5].

Clinical trial: N/A



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