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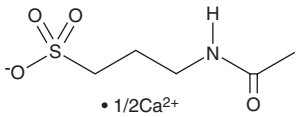
PRODUCT INFORMATION

Acamprosate (calcium salt)

Item No. 23899

CAS Registry No.: 77337-73-6
Formal Name: 3-(acetylamino)-1-propanesulfonic acid, hemicalcium salt (2:1)
Synonym: N-acetyl Homotaurinate, N-acetyl Homotaurine
MF: $C_5H_{10}NO_4S \bullet 1/2Ca$
FW: 200.2
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Acamprosate (calcium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the acamprosate (calcium salt) in the solvent of choice. Acamprosate (calcium salt) is soluble in the organic solvent DMSO, which should be purged with an inert gas, at a concentration of approximately 0.5 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of acamprosate (calcium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of acamprosate (calcium salt) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Acamprosate is an acetylated derivative of the GABA analog homotaurine (tramiprosate; Item No. 20701).[1] Despite its structural similarity to GABA, acamprosate does not act at $GABA_A$ receptors but does decrease paired-pulse inhibition of $GABA_A$ inhibitory post-synaptic currents (IPSCs) at short inter-stimulus intervals when used at a concentration of 300 µM, indicating that it may inhibit $GABA_B$ autoreceptor-mediated inhibition of GABA release.[2-4] It is an NMDA receptor modulator with antagonist or agonist effects depending on brain region, receptor subunit composition, and other factors.[4] Acamprosate (0.26 and 0.52 mmol/kg per day, i.p.) reduces voluntary intake of ethanol in rats, an effect that can be blocked by the GABA antagonist bicuculline (Item No. 11727). Formulations containing acamprosate have been used for the maintenance of alcohol abstinence.

References

1. Boismare, F., Daoust, M., Moore, N., *et al*. A homotaurine derivative reduces the voluntary intake of ethanol by rats: Are cerebral GABA receptors involved? *Pharmacol. Biochem. Behav*. **21(5)**, 787-789 (1984).
2. Reilly, M.T., Lobo, I.A., McCracken, L.M., *et al*. Effects of acamprosate on neuronal receptors and ion channels expressed in *Xenopus oocytes*. *Alcohol. Clin. Exp. Res*. **32(2)**, 188-196 (2008).
3. Berton, F., Francesconi, W.G., Madamba, S.G., *et al*. Acamprosate enhances N-methyl-D-apartate receptor-mediated neurotransmission but inhibits presynaptic $GABA_B$ receptors in nucleus accumbens neurons. *Alcohol Clin. Exp. Res*. **22(1)**, 183-191 (1998).
4. Tomek, S.E., Lacrosse, A.L., Nemirovsky, N.E., *et al*. NMDA receptor modulators in the treatment of drug

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