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ProductInformation

(±)-Baclofen

Product Number **B 5399**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_{10}H_{12}ClNO_2$
Molecular Weight: 213.7
CAS Number: 1134-47-0
Melting Point: 206-208 °C, 189-191 °C (varying reports)[1]

Synonyms: β-(aminomethyl)-4-chlorobenzenepropanoic acid; β-(aminomethyl)-p-chlorohydrocinnamic acid; γ-amino-β-(p-chlorophenyl)butyric acid, β-(4-chlorophenyl)-GABA[1]

Baclofen is a analog of γ-aminobutyric acid (GABA) that interferes with excitatory neurotransmitter release in the central nervous system. It is also an inhibitor of monosynaptic and polysynaptic transmission in the spinal cord.[2] A review that discusses the use of baclofen to target GABA-B receptors in a neurological context has been published.[3]

Baclofen has been utilized at 5-10 μM in a patch clamp study of 69/85 periventricular parvocellular PVN cells to probe the role of pre- and postsynaptic $GABA_B$ receptors in rapid neurotransmission.[4] Under culture conditions, baclofen has been shown to stimulate *Xenopus laevis* retinal ganglion cell neurite outgrowth.[5] Baclofen (20 μM) has been demonstrated to diminish the amplitude of glutamate-evoked postsynaptic potentials in CA1 pyramidal cells.[6]

An HPLC method for the chiral separation of the R-(-)- and S-(+)-enantiomers of baclofen from plasma has been published.[7]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in 1 M HCl (50 mg/ml), with heat as needed, yielding a clear to slightly hazy, colorless to faint yellow solution. It is also soluble in water (4.3 mg/ml, pH 7.6) and 1 M NaOH (20 mg/ml). This product is slightly soluble in alcohol and methanol, and essentially insoluble in acetone, chloroform, and ether.[2]

Storage/Stability

Solutions of this product in dilute acid are stable for several weeks at 4 °C.

References

1. The Merck Index, 12th ed., Entry# 967.
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3. Vacher, C. M., and Bettler, B., $GABA_B$ receptors as potential therapeutic targets. Curr. Drug Target CNS Neurol. Disord., **2(4)**, 248-259 (2003).
4. Wang, D., et al., Pre- and postsynaptic $GABA_B$ receptors modulate rapid neurotransmission from suprachiasmatic nucleus to parvocellular hypothalamic paraventricular nucleus neurons. Neuroscience, **118(1)**, 49-58 (2003).
5. Ferguson, S. C., and McFarlane, S., GABA and development of the *Xenopus* optic projection. J. Neurobiol., **51(4)**, 272-284 (2002).
6. Takigawa, T., and Alzheimer, C., Interplay between activation of GIRK current and deactivation of I_h modifies temporal integration of excitatory input in CA1 pyramidal cells. J. Neurophysiol., **89(4)**, 2238-2244 (2003).
7. Zhu, Z., and Neirinck, L., Chiral separation and determination of R-(-)- and S-(+)-baclofen in human plasma by high-performance liquid chromatography. J. Chromatogr. B Analyt. Technol. Biomed. Life Sci., **785(2)**, 277-283

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