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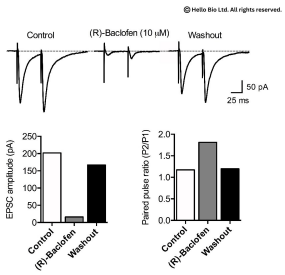
DATASHEET

(R)-Baclofen

Product overview

Name	(R)-Baclofen
Cat No	HB0952
Alternative names	STX 209
Biological action	Agonist
Purity	>98%
Description	Selective $GABA_B$ receptor agonist

Images



Biological Data

Biological description

Active enantiomer of (RS)-Baclofen. Selective $GABA_B$ receptor agonist. Decreases ethanol intake in addiction models. Shows anti-cataplexy actions and promotes sleep. Blood-brain barrier permeable.

Application notes

The $GABAB_B$ receptor agonist (R)−Baclofen is commonly used at concentrations of 1–50 µM. It can be used to target presynaptic $GABA_B$ receptors to inhibit neurotransmitter release. At the Schaffer collateral pathway of the hippocampus, (R)−Baclofen from Hello Bio (applied at 10 µM) led to a reversible reduction in presynaptic glutamate release This was demonstrated as a reduced EPSC amplitude and increase in the amplitude ratio of a 50 ms paired pulse stimulation (see Fig 1 above).

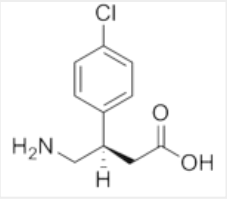
#Protocol 1: Assay evoked EPSCs (used for baclofen)

- Whole cell voltage clamp recordings of CA1 pyramidal neurons from the rat hippocampal brain slice.
- 50 ms paired EPSCs were evoked via stimulating electrode placed in the CA3 region to stimulate the Schaffer collateral pathway delivering two square (150 µs) pulse with a 50 ms interval every 10 sec at an intensity that gave a reliable EPSC.
- Neurons were held at -60 mV (the reversal potential of GABA currents).
- Paired EPSCs were continually stimulated and recorded in response to applications of baclofen until a maximum effect was achieved at which point baclofen was washed out with control solution.
- EPSC amplitudes were taken from the amplitude of the first pulse and paired pulse ratios calculated by dividing the amplitude of pulse 2 by pulse 1 (P2/P1).

Solubility & Handling

Storage instructions	Room temperature
Solubility overview	Soluble in water (20mM) and in DMSO (10mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	(*R*)-4-Amino-3-(4-chlorophenyl)butanoic acid
Molecular Weight	213.66
Chemical structure	
Molecular Formula	$C_{10}H_{12}ClNO_2$
CAS Number	69308-37-8
PubChem identifier	44602
SMILES	C1=CC(=CC=C1[C@@H](CC(=O)O)CN)Cl
InChi	InChI=1S/C10H12ClNO2/c11-9-3-1-7(2-4-9)8(6-12)5-10(13)14/h1-4,8H,5-6,12H2,(H,13,14)/t8-/m0/s1
InChiKey	KPYSYYIEGFHWSV-QMMMGPOBSA-N
MDL number	MFCD01321057
Appearance	White solid

References

Intra-nucleus accumbens shell injections of R(+)- and S(-)-baclofen bidirectionally alter binge-like ethanol, but not saccharin, intake in C57Bl/6J mice.

Kasten CR *et al* (2014) Behav Brain Res 272
PubMedID 25026094

Comparative stereostructure-activity studies on GABAA and GABAB receptor sites and GABA uptake using rat brain membrane preparations.

Falch E *et al* (1986) J Neurochem 47(3)
PubMedID 3016189

GABAB agonism promotes sleep and reduces cataplexy in murine narcolepsy.

Black SW *et al* (2014) J Neurosci 34(19)
PubMedID 24806675