**Product overview**

**Name**  
(R)-Baclofen

**Cat No**  
HB0952

**Short description**  
Selective GABA\textsubscript{B} receptor agonist

**Biological description**  

**Biological action**  
Agonist

**Purity**  
>99%

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**Images**

![Graphical representation of biological action](image-url)

The GABA\textsubscript{B} receptor agonist (R)-Baclofen is commonly used at concentrations of 1–50 μM. It can be used to target presynaptic GABA\textsubscript{B} receptors to inhibit neurotransmitter release. At the Schaffer collateral pathway of the hippocampus, (R)-Baclofen from Helio 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. For assay protocol, see #Protocol 1 in Application Notes below.
Properties

Chemical name: \((R)-4\text{-Amino-3-(4-chlorophenyl)butanoic acid}\)
Molecular Weight: 213.66
Chemical structure:

![Chemical structure diagram]

Molecular Formula: \(C_{10}H_{12}ClNO_2\)
CAS Number: 69308-37-8
PubChem identifier: 44602
SMILES: C1=CC(=CC=C1[O@@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: KPYSYYIEGFHW5SV-QMMMGPOBSA-N
MDL number: MFCD01321057
Appearance: White solid

Applications

Application notes:
The GABAB\(_5\) receptor agonist \((R)-Baclofen\) is commonly used at concentrations of 1–50 \(\mu\)M. It can be used to target presynaptic GABAB\(_5\) receptors to inhibit neurotransmitter release. At the Schaffer collateral pathway of the hippocampus, \((R)-Baclofen\) from Hello Bio (applied at 10 \(\mu\)M) 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 \(\mu\)s) 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).

Storing and Using Your Product

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.

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


PubMedID: 25026094

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


PubMedID: 3016189

GABAB agonism promotes sleep and reduces cataplexy in murine narcolepsy.


PubMedID: 24806675