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DATASHEET

(R,S)-AMPA

Product overview

 Name
 (R,S)-AMPA

 Cat No
 HB0030

 Biological action
 Agonist

 Purity
 >98%

Description Prototypic AMPA receptor agonist

Images



Biological Data

Biological description

Prototypic AMPA receptor agonist (EC₅₀ = 11 μ M). (S)-AMPA is the active enantiomer form.

Application notes

The AMPA receptor agonist (R,S)-AMPA is typically used at concentrations of 1-100 μ M. At 10 μ M, (R,S)-AMPA from Hello Bio induces a large depolarising current. This depolarising current was occluded in the presence of the AMPA receptor antagonist NBQX (20 μ M). (See Fig 1 above).

#Protocol 1: (R,S)-AMPA protocol

- Whole cell voltage clamp recordings of CA1 pyramidal neurons from the rat hippocampal brain slice.
- Neurons were held at -60 mV and continuously perfused with aCSF in the presence of the GABA receptor antagonist gabazine (20μM).
- AMPA currents were evoked via applying (R,S)-AMPA directly to the recording chamber during continuous perfusion.
- To test the selectivity of (R,S)-AMPA to AMPA receptors, the experiment was repeated within the same neuron in the presence of the AMPA receptor antagonist NBQX (20 μM)
- Under these conditions (R,S)-AMPA failed to induce a depolarising current.

Solubility overview Soluble in water (10mM, gentle warming)
Storage instructions Room temperature

Storage of solutions Prepare and use solutions on the same day if possible. Store solutions at -20 °C for up to one month if

storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

Shipping Conditions Stable for ambient temperature shipping. Follow storage instructions on receipt.

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 (RS)-α-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid

Molecular Weight 186.17

Chemical structure HO₂C

HO₂C OH

Source Synthetic

InChi InChi=1S/C7H10N2O4/c1-3-4(6(10)9-13-3)2-5(8)7(11)12/h5H,2,8H2,1H3,(H,9,10)(H,11,12)

InChiKey UUDAMDVQRQNNHZ-UHFFFAOYSA-N

MDL number MFCD00213388 Appearance White solid

References

The AMPA receptor binding site: focus on agonists and competitive antagonists.

Stensbøl TB *et al* (2002) Curr Pharm Des 8(10) **PubMedID**11945136

Willardiines differentiate agonist binding sites for kainate- versus AMPA-preferring glutamate receptors in DRG and hippocampal neurons.

Wong LA *et al* (1994) J Neurosci 14(6) **PubMedID** 7515954

Activation and desensitization of AMPA/kainate receptors by novel derivatives of willardiine.

Patneau DK *et al* (1992) J Neurosci 12(2) **PubMedID**1371315