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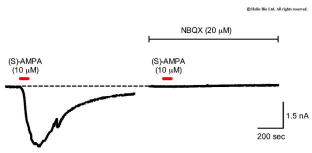
DATASHEET

(S)-AMPA

Product overview

Name	(S)-AMPA
Cat No	HB0052
Biological action	Agonist
Purity	>99%
Description	AMPA receptor agonist

Images



Biological Data

Biological description

(S)-AMPA is an AMPA receptor agonist and the active enantiomer of AMPA. It is a neurotoxin in the immature rat brain.

Application notes

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

#Protocol 1: (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 (S)-AMPA directly to the recording chamber during continuous perfusion.
- To test the selectivity of (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 (S)-AMPA failed to induce a depolarising current.

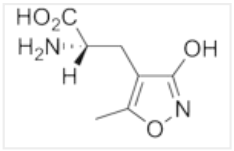
Solubility & Handling

Storage instructions

Room temperature

Solubility overview	Soluble in water (100mM)
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	(*S*)-α-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid
Molecular Weight	186.17
Chemical structure	
Molecular Formula	$C_7H_{10}N_2O_4$
CAS Number	83643-88-3
PubChem identifier	158397
SMILES	CC1=C(C(=O)NO1)C[C@@H](C(=O)O)N
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)/t5-/m0/s1
InChiKey	UUDAMDVQRQNNHZ-YFKPBYRVSA-N
MDL number	MFCD00672630
Appearance	White solid

References

Enzymic resolution and binding to rat brain membranes of the glutamic acid agonist alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid.

Hansen JJ *et al* (1983) J Med Chem 26(6)
PubMedID 6133955

Ibotenic acid analogues. Synthesis, molecular flexibility, and in vitro activity of agonists and antagonists at central glutamic acid receptors.

Lauridsen J *et al* (1985) J Med Chem 28(5)
PubMedID 2859375

The selective ionotropic-type quisqualate receptor agonist AMPA is a potent neurotoxin in immature rat brain.

McDonald JW *et al* (1990) Brain Res 526(1)
PubMedID 1964108