

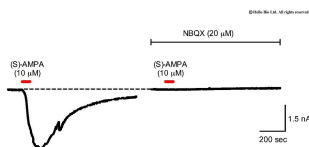
# DATASHEET

## (S)-AMPA

### Product overview

<b>Name</b>	(S)-AMPA
<b>Cat No</b>	HB0052
<b>Biological action</b>	Agonist
<b>Purity</b>	>99%
<b>Description</b>	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  $\mu\text{M}$ . At 10  $\mu\text{M}$ , (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 $\mu\text{M}$ ). (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 (20 $\mu\text{M}$ ).
- 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  $\mu\text{M}$ )
- Under these conditions (S)-AMPA failed to induce a depolarising current.

### Solubility & Handling

**Storage instructions** Room temperature

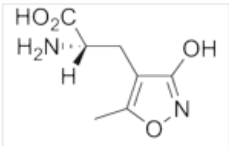
**Solubility overview**  
**Important**

Soluble in water (100mM)

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

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## Chemical Data

<b>Chemical name</b>	(S)- $\alpha$ -Amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid
<b>Molecular Weight</b>	186.17
<b>Chemical structure</b>	
<b>Molecular Formula</b>	C <sub>7</sub> H <sub>10</sub> N <sub>2</sub> O <sub>4</sub>
<b>CAS Number</b>	83643-88-3
<b>PubChem identifier</b>	158397
<b>SMILES</b>	CC1=C(C(=O)NO1)C[C@@H](C(=O)O)N
<b>Source</b>	Synthetic
<b>InChi</b>	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-m/s1
<b>InChiKey</b>	UUDAMDVQRQNNHZ-YFKPBYR/SA-N
<b>MDL number</b>	MFCD00672630
<b>Appearance</b>	White solid

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## 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](#)

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