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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 $\mu$ M. At 10 $\mu$ 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 $\mu$ M). (See Fig 1 above).
	#Protocol 1: (S)-AMPA protocol
	<ul> <li>Whole cell voltage clamp recordings of CA1 pyramidal neurons from the rat hippocampal brain slice.</li> <li>Neurons were held at -60 mV and continuously perfused with aCSF in the presence of the GABA receptor antagonist gabazine (20μM).</li> <li>AMPA currents were evoked via applying (S)-AMPA directly to the recording chamber during continuous perfusion.</li> <li>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)</li> <li>Under these conditions (S)-AMPA failed to induce a depolarising current.</li> </ul>

## Solubility & Handling

Storage instructions

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.

## **Chemical Data**

Chemical name Molecular Weight Chemical structure	( <i>S</i> )-α-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid 186.17 HO <sub>2</sub> C H <sub>2</sub> N····································
Molecular Formula CAS Number PubChem identifier SMILES Source InChi	C <sub>7</sub> H <sub>10</sub> N <sub>2</sub> O <sub>4</sub> 83643-88-3 158397 CC1=C(C(=O)NO1)C[C@@H](C(=O)O)N Synthetic 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/s 1
InChiKey MDL number Appearance	UUDAMDVQRQNNHZ-YFKPBYRVSA-N MFCD00672630 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