

Product datasheet

Ionotropic Agonists Kit ab120323

Overview

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**Product name** Ionotropic Agonists Kit

**Specificity** A collection of 8 agonists, antagonists and potentiators at AMPA, Kainate and NMDA receptors. Products are freeze-dried to an exact weight so that addition of 1 ml or 0.5 ml of solvent provides a stock solution of 5 mM or 10 mM, respectively. The kit contains (S)-AMPA, (ab120005), (S)-5-Fluorowillardiine hydrochloride (ab120399), Cyclothiazide (ab120061), Aniracetam (ab120316), Kainic acid (ab120100), (S)-5-Iodowillardiine hydrochloride (ab120401), NMDA (ab120052) and D-serine (ab120048).

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Receptor

Description

**AMPA**

**(S)-AMPA:**

AMPA agonist.

**Suggested Solvent:** Water

**AMPA**

**Cyclothiazide:**

Positive allosteric modulator of AMPA receptors. Produces a fast inhibition of AMPA receptor desensitization and a much slower potentiation of the AMPA current.

**Suggested Solvent:** DMSO

## **AMPA**

### **Aniracetam:**

Nootropic, positive allosteric modulator of AMPA receptors. Slows AMPA receptor deactivation and desensitisation. Antidepressant and anxiolytic *in vivo*.

**Suggested Solvent:** DMSO

## **Kainate**

### **Kainic acid:**

Prototypic agonist at the kainate class of ionotropic glutamate receptors. Potent excitant and neurotoxin, used to model epilepsy and neurodegenerative states.

**Suggested Solvent:** Water

## **Kainate**

### **NMDA:**

Excitotoxic amino acid. Prototypic agonist at the ionotropic NMDA glutamate receptor which is involved in long-term potentiation, ischemia, and epilepsy.

**Suggested Solvent:** Water

## **NMDA**

### **D-Serine:**

Agonist at the NMDA glycine binding site and the inhibitory post-synaptic glycine receptor.

**Suggested Solvent:** Water

## **Notes**

Providing storage is as stated on the product vial and the vial is kept tightly sealed, the product can be stored for up to 6 months.

Wherever possible, you should prepare and use solutions on the same day. However, if you need to make up stock solutions in advance, we recommend that you store the solution as aliquots in tightly sealed vials at -20°C. Generally, these will be useable for up to one week. Before use, and prior to opening the vial we recommend that you allow your product to equilibrate to room temperature for at least 1 hour.

KIT

## **Properties**

**Storage instructions** Store at -20°C. Please refer to protocols.

Components	1 kit
<a href="#">ab120005 - (S)-AMPA</a>	1 vial
<a href="#">ab120316 - Aniracetam</a>	1 vial
<a href="#">ab120061 - Cyclothiazide</a>	1 vial
<a href="#">ab120048 - D-Serine</a>	1 vial
<a href="#">ab120100 - Kainic acid</a>	1 vial
<a href="#">ab120052 - NMDA</a>	1 vial

**Function** Ionotropic glutamate receptor. L-glutamate acts as an excitatory neurotransmitter at many synapses in the central nervous system. Binding of the excitatory neurotransmitter L-glutamate induces a conformation change, leading to the opening of the cation channel, and thereby converts the chemical signal to an electrical impulse. The receptor then desensitizes rapidly and enters a transient inactive state, characterized by the presence of bound agonist.

**Tissue specificity** Widely expressed in brain.

**Sequence similarities** Belongs to the glutamate-gated ion channel (TC 1.A.10.1) family. GRIA1 subfamily.

**Post-translational modifications** Palmitoylated. Depalmitoylated upon glutamate stimulation. Cys-603 palmitoylation leads to Golgi retention and decreased cell surface expression. In contrast, Cys-829 palmitoylation does not affect cell surface expression but regulates stimulation-dependent endocytosis.

**Cellular localization** Cell membrane. Endoplasmic reticulum membrane. Cell junction > synapse > postsynaptic cell membrane. Interaction with CACNG2 promotes cell surface expression.

**Please note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE"

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