

## Product datasheet

# Ionotropic Agonists Kit ab120323

### Overview

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<b>Product name</b>	Ionotropic Agonists Kit
<b>Specificity</b>	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, ( <a href="#">ab120005</a> ), (S)-5-Fluorowillardiine hydrochloride ( <a href="#">ab120399</a> ), Cyclothiazide ( <a href="#">ab120061</a> ), Aniracetam ( <a href="#">ab120316</a> ), Kainic acid ( <a href="#">ab120100</a> ), (S)-5-Iodowillardiine hydrochloride ( <a href="#">ab120401</a> ), NMDA ( <a href="#">ab120052</a> ) and D-serine ( <a href="#">ab120048</a> ).
<b>Product overview</b>	<p>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, (<a href="#">ab120005</a>), (S)-5-Fluorowillardiine hydrochloride (<a href="#">ab120399</a>), Cyclothiazide (<a href="#">ab120061</a>), Aniracetam (<a href="#">ab120316</a>), Kainic acid (<a href="#">ab120100</a>), (S)-5-Iodowillardiine hydrochloride (<a href="#">ab120401</a>), NMDA (<a href="#">ab120052</a>) and D-serine (<a href="#">ab120048</a>).</p> <p>Receptor</p> <p>Description</p> <p><b>AMPA</b></p> <p><b>(S)-AMPA:</b></p> <p>AMPA agonist.</p> <p><b>Suggested Solvent:</b> Water</p> <p><b>AMPA</b></p> <p><b>(S)-5-Fluorowillardiine hydrochloride:</b></p> <p>Potent, selective AMPA receptor agonist. Displays higher affinity than AMPA at hGluR1 and hGluR2, and displays greater selectivity for AMPA receptor subtypes over the kainate receptor hGluR5.</p> <p><b>Suggested Solvent:</b> Water</p> <p><b>AMPA</b></p> <p><b>Cyclothiazide:</b></p> <p>Positive allosteric modulator of AMPA receptors. Produces a fast inhibition of AMPA receptor desensitization and a much slower potentiation of the AMPA current.</p> <p><b>Suggested Solvent:</b> DMSO</p> <p><b>AMPA</b></p> <p><b>Aniracetam:</b></p>

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**

**(S)-5-Iodowillardiine hydrochloride:**

Selective GluK1 (formerly GluR5) kainate receptor agonist ( $EC_{50} = 83 \mu\text{M}$ ). Partial agonist activity at GluK2 (formerly GluR6/KA2) receptors. Displays low affinity for AMPA and homomeric GluR6 and GluR7 receptors.

**Suggested Solvent:** DMSO

**NMDA**

**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**

KIT

**Properties**

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

Components	1 kit
<a href="#">ab120399 - (S)-5-Fluorowillardiine hydrochloride</a>	1 vial
<a href="#">ab120401 - (S)-5-Iodowillardiine hydrochloride</a>	1 vial
<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

<b>Components</b>	<b>1 kit</b>
ab120052 - NMDA	1 vial
<b>Function</b>	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.
<b>Tissue specificity</b>	Widely expressed in brain.
<b>Sequence similarities</b>	Belongs to the glutamate-gated ion channel (TC 1.A.10.1) family. GRIA1 subfamily.
<b>Post-translational modifications</b>	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.
<b>Cellular localization</b>	Cell membrane. Endoplasmic reticulum membrane. Cell junction > synapse > postsynaptic cell membrane. Interaction with CACNG2 promotes cell surface expression.

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