

Certificate of Analysis

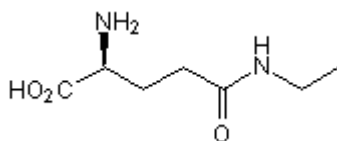
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Product Name: Theanine
CAS Number: 3081-61-6
IUPAC Name: *N*-Ethyl-L-glutamine

Catalog No.: 3847
Batch No.: 1
EC Number: 221-379-0

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₇H₁₄N₂O₃
Batch Molecular Weight: 174.2
Physical Appearance: White solid
Solubility: water to 100 mM
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	48.26	8.1	16.08
Found	48.27	8.25	16.2

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

Product Information

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Description:

Amino acid analog of glutamine and component of green tea. Shown to bind to AMPA, Kainate, NMDA and group I mGlu receptors. Displays neuroprotective effects in vivo. Promotes self-renewal of human embryonic stem cells (hESC).

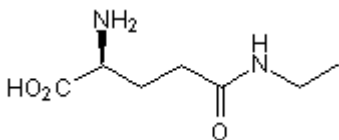
Physical and Chemical Properties:

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Storage: Store at RT

Solubility & Usage Info:

water to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Kakuda et al (2002) Inhibition by theanine of binding of [³H]AMPA, [³H]kainate, and [³H]MDL 105,519 to glutamate receptors. *Biosci.Biotechnol.Biochem.* **66** 2683. PMID: 12596867.

Nagasawa et al (2004) Possible involvement of group I mGluRs in neuroprotective effect of theanine. *Biochem.Biophys.Res.Comm.* **320** 116.

Egashira et al (2008) Theanine prevents memory impairment induced by repeated cerebral ischemia in rats. *Phytother.Res.* **22** 65. PMID: 17705146.

Desbordes et al (2008) High-throughput screening assay for the identification of compounds regulating self-renewal and differentiation in human embryonic stem cells. *Cell Stem Cell.* **2** 602. PMID: 18522853.

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