

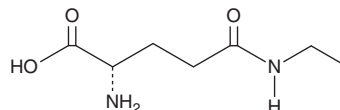
# PRODUCT INFORMATION



## L-Theanine

Item No. 20832

**CAS Registry No.:** 3081-61-6  
**Formal Name:** N-ethyl-L-glutamine  
**Synonyms:** L-Glutamic Acid  $\gamma$ -ethyl amide,  
 $\gamma$ -ethylamino-L-Glutamic Acid,  
5-N-ethyl-Glutamine, NSC 21308  
**MF:**  $C_7H_{14}N_2O_3$   
**FW:** 174.2  
**Purity:**  $\geq 95\%$   
**Supplied as:** A crystalline solid  
**Storage:**  $-20^\circ\text{C}$   
**Stability:**  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

L-Theanine is supplied as a crystalline solid. Aqueous solutions of L-theanine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of L-theanine in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

L-Theanine is the major amino acid found in *C. sinensis*, the source of green tea.<sup>1</sup> It is an analog of the excitatory neurotransmitter, glutamate, and thusly, binds to glutamate receptors.<sup>2</sup> L-Theanine can antagonize various glutamate receptor subtypes as well as inhibit glutamine and glutamate transporters, which has been shown to be neuroprotective in animal models of focal cerebral ischemia.<sup>2,3</sup> Further, L-theanine is reported to increase brain levels of dopamine, serotonin, GABA, nerve growth factor, and brain-derived neurotrophic factor.<sup>2,3</sup>

### References

1. Thippeswamy, R., Gouda, K.G., Roa, D.H., *et al.* Determination of theanine in commercial tea by liquid chromatography with fluorescence and diode array ultraviolet detection. *J. Agric. Food Chem.* **54**(19), 7014-19 (2006).
2. Eschenauer, G. and Sweet, B.V. Pharmacology and therapeutic uses of theanine. *Am. J. Health-Syst. Pharm.* **63**(1), 26, 28-30 (2006).
3. Nathan, P.J., Lu, K., Gray, M., *et al.* The neuropharmacology of L-theanine (N-ethyl-L-glutamine): A possible neuroprotective and cognitive enhancing agent. *J. Herb. Pharmacother.* **6**(2), 21-30 (2006).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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