

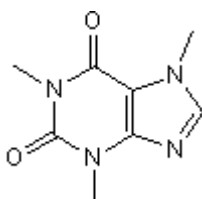
Certificate of Analysis

Product Name: Caffeine
CAS Number: 58-08-2
IUPAC Name: 3,7-Dihydro-1,3,7-trimethyl-1*H*-purine-2,6-dione

Catalog No.: 2793
Batch No.: 1
EC Number: 200-362-1

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₈H₁₀N₄O₂
Batch Molecular Weight: 194.19
Physical Appearance: White solid
Solubility: water to 100 mM
DMSO to 50 mM
ethanol to 10 mM
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

Melting Point: At 237°C
HPLC: Shows >99.9% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	49.48	5.19	28.85
Found	49.47	5.11	28.47

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

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Description:

Central nervous system stimulant. Antagonist at A₁ and A_{2A} adenosine receptors and inhibitor of cyclic nucleotide phosphodiesterases. Mobilizes calcium from intracellular stores and inhibits benzodiazepine binding to GABA receptors.

Physical and Chemical Properties:

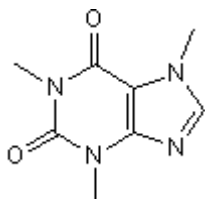
Batch Molecular Formula: C₈H₁₀N₄O₂

Batch Molecular Weight: 194.19

Physical Appearance: White solid

Minimum Purity: >99%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

water to 100 mM

DMSO to 50 mM

ethanol to 10 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:

Nehlig *et al* (1992) Caffeine and the central nervous system: mechanisms of action, biochemical, metabolic and psychostimulant effects. *Brain Res. Brain Res. Rev.* **17** 139. PMID: 1356551.

Fisone *et al* (2004) Caffeine as a psychomotor stimulant: mechanism of action. *Cell. Mol. Life Sci.* **61** 857. PMID: 15095008.

Chen *et al* (2008) Caffeine blocks disruption of blood brain barrier in a rabbit model of Alzheimer's disease. *J. Neuroinflammation* **5** 12. PMID: 18387175.

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