

Caffeine Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Caffeine

Catalog No.: CFN99004

Cas No.: 58-08-2

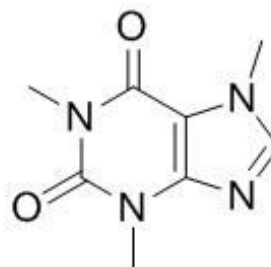
Purity: > 98%

M.F: C₈H₁₀N₄O₂

M.W: 194.2

Physical Description: Powder

Synonyms: 1,3,7-Trimethylpurine-2,6-dione.



[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Synthetic precursor compounds;
5. Care and daily chemicals;
6. Intermediates & Fine Chemicals;
7. Ingredient in supplements, beverages;
8. Others.

[Source]

The seeds of *Theobroma cacao* L.

[Biological Activity or Inhibitors]

Caffeine, a component of tea, coffee and cola, induces wakefulness, it binds to adenosine A1 and A2A receptors as an antagonist, but caffeine-induced wakefulness depends on adenosine A2A receptors.^[1]

Caffeine therapy for apnea of prematurity can reduce the rate of bronchopulmonary dysplasia in infants with very low birth weight, but the ingestion of caffeine may increase the risk of an early spontaneous abortion among non-smoking women carrying fetuses with normal karyotypes.^[2,3]

Caffeine is a potent stimulator of plasma renin activity and adrenomedullary secretion; mean blood pressure rose 14/10 mm Hg one hour after caffeine ingestion, there is a slight fall and then a rise in heart rate.^[4]

Caffeine exposure sensitizes tumor cells to ionizing radiation and other genotoxic agents, the radiosensitizing effects of caffeine are related to inhibition of the protein kinase activities of ATM and ATR and that both proteins are relevant targets for the development of novel anticancer agents.^[5]

[Solvent]

Chloroform, Dichloromethane, DMSO, Acetone, etc.

[HPLC Method]^[6]

Mobile phase: 0.1% THF in water(pH 8)-Acetonitrile =90:10 ;

Flow rate: 0.8 ml/min;

Column temperature: 25 °C;

The wave length of determination: 273 nm.

[Storage]

2-8°C, Protected from air and light, refrigerate or freeze.

[References]

- [1] Huang Z L, Qu W M, Eguchi N, *et al.* *Nat. Neurosci.*, 2005, 8(7):858-9.
- [2] Schmidt B, Roberts R S, Davis P, *et al.* *New Engl. J. Med.*, 2006, 354(20):2112-21.
- [3] Cnatingius S, Signorello L B, Annerén G, *et al.* *New Engl. J. Med.*, 2000, 343(25): 1839-45.
- [4] Robertson D, Frölich J C, Carr R K, *et al.* *New Engl. J. Med.*, 1978, 298(4):181-6.
- [5] Sarkaria J N, Busby E C, Tibbetts R S, *et al.* *Cancer Res.*, 1999, 59(17):4375-82.
- [6] Srdjenovic B, Djordjevicmilic V, Grujic N, *et al.* *J. Chromatogr. Sci.*, 2008, 46(2):144-9.

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