

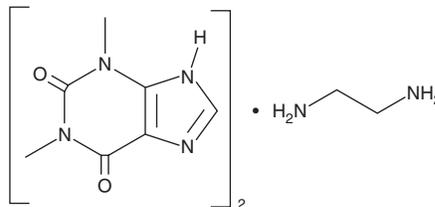
# PRODUCT INFORMATION



## Aminophylline

Item No. 22235

**CAS Registry No.:** 317-34-0  
**Formal Name:** 3,9-dihydro-1,3-dimethyl-1H-purine-2,6-dione 1,2-ethanediamine (2:1)  
**MF:** C<sub>7</sub>H<sub>8</sub>N<sub>4</sub>O<sub>2</sub> • 1/2C<sub>2</sub>H<sub>8</sub>N<sub>2</sub>  
**FW:** 210.2  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 272 nm  
**Supplied as:** A crystalline solid  
**Storage:** Room temperature  
**Stability:** ≥4 years



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

### Laboratory Procedures

Aminophylline is supplied as a crystalline solid. A stock solution may be made by dissolving the aminophylline in the solvent of choice, which should be purged with an inert gas. Aminophylline is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of aminophylline in ethanol is approximately 0.2 mg/ml and approximately 2 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of aminophylline can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of aminophylline in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Aminophylline is a competitive and non-selective phosphodiesterase inhibitor (IC<sub>50</sub> = 120 μM) and adenosine receptor antagonist.<sup>1,2</sup> It is a complex of theophylline and ethylenediamine that has *in vivo* bronchodilator and vasodilator effects.<sup>1,3</sup> Aminophylline suppresses maternal separation- and acetic acid administration-induced visceral hypersensitivity to colorectal distension in a rat model of irritable bowel syndrome with diarrhea (IBS-D).<sup>4</sup> Aminophylline also provides renoprotection against murine renal ischemia-reperfusion injury.<sup>5</sup>

### References

1. Ruthorford, J.D., Vatner, S.F., and Braunwald, E. *Circulation* **63**(2), 378-387 (1981).
2. Davari, A.S., Abnous, K., Mehri, S., et al. *Bioorg. Chem.* **57**, 83-89 (2014).
3. Tai, E.S. and Read, J. *Thorax* **22**(6), 543-549 (1967).
4. Asano, T., Tanaka, K.-i., Tada, A., et al. *Sci. Rep.* **7**:40214 (2017).
5. Seo, K., Choi, J.W., Kim, D.-W., et al. *Transplant Proc.* **49**(2), 358-365 (2017).

#### 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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