

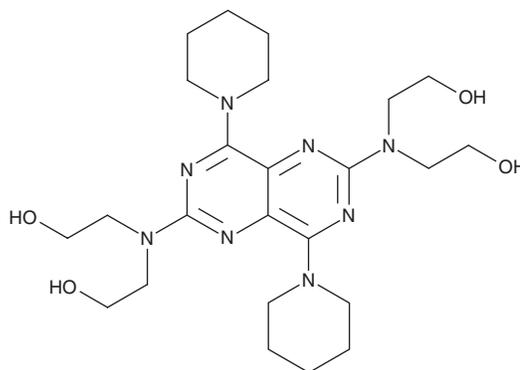
PRODUCT INFORMATION



Dipyridamole

Item No. 18189

CAS Registry No.: 58-32-2
Formal Name: 2,2',2'',2'''-[(4,8-di-1-piperidinyl)pyrimido[5,4-d]pyrimidine-2,6-diyl)dinitrilo]tetrakis-ethanol
Synonyms: NSC 515776, NSC 619103
MF: C₂₄H₄₀N₈O₄
FW: 504.6
Purity: ≥98%
UV/Vis.: λ_{max}: 230, 290, 410 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Dipyridamole is supplied as a crystalline solid. A stock solution may be made by dissolving the dipyridamole in the solvent of choice. Dipyridamole is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of dipyridamole in ethanol is approximately 5 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Dipyridamole is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, dipyridamole should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Dipyridamole has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Dipyridamole is a phosphodiesterase 5A (PDE5A) inhibitor (IC₅₀ = 574 nM) that prevents platelet aggregation by increasing cGMP levels and blocking the reuptake of adenosine *via* red blood cells.^{1,2} It also scavenges the free radicals that inactivate cyclooxygenase, leading to the inhibition of platelet activation and thrombin generation.¹ Dipyridamole has also been shown to inhibit PDE11A with an IC₅₀ value of 370 nM and equilibrative nucleoside transporter 1 (ENT1) with a K_i value of 8.18 nM.^{3,4} It inhibits replication of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in Vero E6 cells when used at a concentration of 100 nM.⁶ Formulations containing dipyridamole in combination with aspirin (Item No. 70260) have been used to prevent stroke and other cardiovascular events.⁵

References

1. Rondina, M.T. and Weyrich, A.S. *Handb. Exp. Pharmacol.* **210**, 225-238 (2012).
2. Watanabe, N., Adachi, H., Takase, Y., *et al.* *J. Med. Chem.* **43**(13), 2523-2529 (2000).
3. Fawcett, L., Baxendale, R., Stacey, P., *et al.* *Proc. Natl. Acad. Sci. USA* **97**(7), 3702-3707 (2000).
4. Lin, W. and Buolamwini, J.K. *J. Med. Chem.* **50**(60), 3906-3920 (2007).
5. Coccheri, S. *Drugs* **70**(7), 887-908 (2010)
6. Liu, X., Li, Z., Liu, S., *et al.* *Acta. Pharm. Sin. B* (2020).

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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