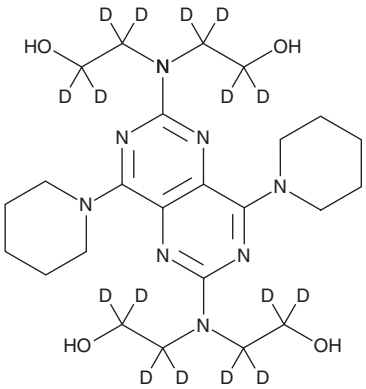
PRODUCT INFORMATION

Dipyridamole-d_{16}

Item No. 30138



CAS Registry No.:	2712261-50-0
Formal Name:	2,2',2",2"'-[(4,8-di-1-piperidinylpyrimido[5,4-d]pyrimidine-2,6-diyl)dinitrilo]tetrakis-ethanol-1,1,2,2-d_4
MF:	$C_{24}H_{24}D_{16}N_8O_4$
FW:	520.7
Chemical Purity:	≥95% (Dipyridamole)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_{16}); ≤1% d_0
Supplied as:	A 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-d_{16} is intended for use as an internal standard for the quantification of dipyridamole (Item No. 18189) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Dipyridamole-d_{16} is supplied as a solid. A stock solution may be made by dissolving the dipyridamole-d_{16} in the solvent of choice, which should be purged with an inert gas. Dipyridamole-d_{16} is soluble in methanol and DMSO.

Description

Dipyridamole is a phosphodiesterase 5A (PDE5A) inhibitor (IC_{50} = 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 IC_{50} value of 370 nM and equilibrative nucleoside transporter 1 (ENT1) with a K_i value of 8.18 nM.[3,4] Formulations containing dipyridamole in combination with aspirin have been used to prevent stroke and other cardiovascular events.

References

1. Rondina, M.T. and Weyrich, A.S. Targeting phosphodiesterases in anti-platelet therapy. *Antiplatelet Agents. Handbook of Experimental Pharmacology*. Gresele, P., Born, G., Patrono, C., Page, C., editors, 1st edition, Springer (2012).
2. Watanabe, N., Adachi, H., Takase, Y., *et al.* 4-(3-Chloro-4-methoxybenzyl)aminophthalazines: Synthesis and inhibitory activity toward phosphodiesterase 5. *J. Med. Chem.* **43(13)**, 2523-2529 (2000).
3. Fawcett, L., Baxendale, R., Stacey, P., *et al.* Molecular cloning and characterization of a distinct human phosphodiesterase gene family: PDE11A. *Proc. Natl. Acad. Sci. USA* **97(7)**, 3702-3707 (2000).
4. Lin, W. and Buolamwini, J.K. Synthesis, flow cytometric evaluation, and identification of highly potent dipyridamole analogues as equilibrative nucleoside transporter 1 inhibitors. *J. Med. Chem.* **50(16)**, 3906-3920 (2007).

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