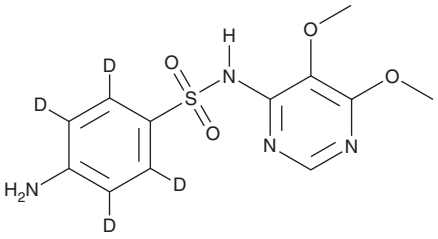
PRODUCT INFORMATION

Sulfadoxin-d_4

Item No. 37200

CAS Registry No.: 1330266-05-1
Formal Name: 4-amino-N-(5,6-dimethoxy-4-pyrimidinyl)-benzenesulfonamide-d_4
Synonym: Ro 4-4393-d_4
MF: $C_{12}H_{10}D_4N_4O_4S$
FW: 314.4
Chemical Purity: ≥98% (Sulfadoxin)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤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

Sulfadoxin-d_4 is intended for use as an internal standard for the quantification of sulfadoxin (Item No. 21488) 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).

Sulfadoxin-d_4 is supplied as a solid. A stock solution may be made by dissolving the sulfadoxin-d_4 in the solvent of choice, which should be purged with an inert gas. Sulfadoxin-d_4 is soluble in DMSO, methanol, and acetone.

Description

Sulfadoxin is a sulfonamide antibiotic that inhibits dihydropteroate synthetase (DHPS), an enzyme involved in folic acid (Item No. 20515) synthesis.[1] Sulfadoxin competes with 4-aminobenzoate (PABA), the native substrate of DHPS, and inhibits PABA incorporation into folic acid.[2] Folate is essential for purine and pyrimidine synthesis, therefore, sulfadoxin has antiproliferative activity in non-resistant *P. falciparum*.[2,3] Sulfadoxin inhibits growth of *P. falciparum in vitro*, but potency varies between non-resistant (IC_{50} = 4 ng/ml) and resistant strains (IC_{50} = 3,970 ng/ml).[3]

References

1. Brooks, D.R., Wang, P., Read, M., *et al.* Sequence variation of the hydroxymethyldihydropterin pyrophosphokinase: dihydropteroate synthase gene in lines of the human malaria parasite, *Plasmodium falciparum*, with differing resistance to sulfadoxine. *Eur. J. Biochem.* **224(2)**, 397-405 (1994).
2. Hyde, J.E. Exploring the folate pathway in *Plasmodium falciparum*. *Acta. Trop.* **94(3)**, 191-206 (2005).
3. Wang, P., Read, M., Sims, P.F.G., *et al.* Sulfadoxine resistance in the human malaria parasite Plasmodium falciparum is determined by mutations in dihydropteroate synthetase and an additional factor associated with folate utilization. *Mol. Microbiol.* **23(5)**, 979-986 (1997).

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