

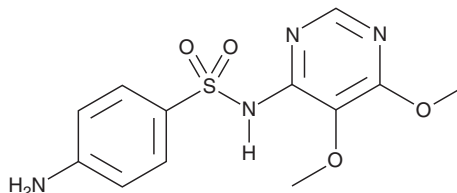
PRODUCT INFORMATION



Sulfadoxin

Item No. 21488

CAS Registry No.: 2447-57-6
Formal Name: 4-amino-N-(5,6-dimethoxy-4-pyrimidinyl)-benzenesulfonamide
Synonym: Ro 4-4393
MF: C₁₂H₁₄N₄O₄S
FW: 310.3
Purity: ≥98%
UV/Vis.: λ_{max}: 273 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

Sulfadoxin is supplied as a crystalline solid. A stock solution may be made by dissolving the sulfadoxin in the solvent of choice, which should be purged with an inert gas. Sulfadoxin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of sulfadoxin in ethanol is approximately 0.3 mg/ml and approximately 50 mg/ml in DMSO and DMF.

Sulfadoxin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, sulfadoxin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Sulfadoxin 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

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 (IC₅₀ = 4 ng/ml) and resistant strains (IC₅₀ = 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).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/13/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM