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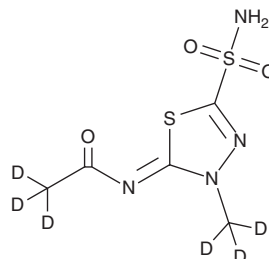
PRODUCT INFORMATION



Methazolamide-d₆

Item No. 33933

CAS Registry No.: 1795142-30-1
Formal Name: N-[5-(aminosulfonyl)-3-methyl-1,3,4-thiadiazol-2(3H)-ylidene]-acetamide-d₆
MF: C₅H₂D₆N₄O₃S₂
FW: 242.3
Chemical Purity: ≥98% (Methazolamide)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₆); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Methazolamide-d₆ is intended for use as an internal standard for the quantification of methazolamide (Item No. 23413) 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).

Methazolamide-d₆ is supplied as a solid. A stock solution may be made by dissolving the methazolamide-d₆ in the solvent of choice, which should be purged with an inert gas. Methazolamide-d₆ is soluble in methanol and DMSO.

Description

Methazolamide is a carbonic anhydrase inhibitor (IC₅₀ = 130 nM).¹ It reduces intraocular pressure and cerebrospinal fluid flow in a rat model of glaucoma. Methazolamide reduces electroshock-induced seizures in rats with an ED₅₀ value of 19.2 mg/kg.² It also inhibits production of reactive oxygen species (ROS) in a primary cortical neuron (PCN) cellular model of subarachnoid hemorrhage (SAH) and reduces cerebral edema in a mouse model of SAH.³ Methazolamide is larvicidal, with a 50% larvicidal concentration (LC₅₀) value of 724 ppm, but has no activity when administered in the diet to adult *A. aegypti*.⁴ Formulations containing methazolamide have been used in the treatment of glaucoma.

References

1. Maren, T.H. Carbonic anhydrase: Chemistry, physiology, and inhibition. *Physiol. Rev.* **47**(4), 595-781 (1967).
2. Gray, W.D. and Rauh, C.E. The anticonvulsant action of the carbonic anhydrase inhibitor methazolamide: Possible involvement of a noradrenergic mechanism. *Eur. J. Pharmacol.* **28**(1), 42-54 (1974).
3. Li, M., Wang, W., Mai, H., et al. Methazolamide improves neurological behavior by inhibition of neuron apoptosis in subarachnoid hemorrhage mice. *Sci. Rep.* **6**, 35055 (2016).
4. Francis, S.A., Taylor-Wells, J., Gross, A.D., et al. Toxicity and physiological actions of carbonic anhydrase inhibitors to *Aedes aegypti* and *Drosophila melanogaster*. *Insects* **8**(1), 2 (2016).

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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