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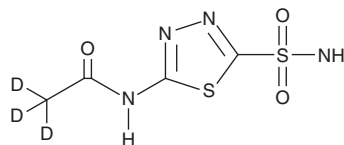
PRODUCT INFORMATION



Acetazolamide-d₃

Item No. 40125

CAS Registry No.: 1189904-01-5
Formal Name: N-[5-(aminosulfonyl)-1,3,4-thiadiazol-2-yl]-acetamide-2,2,2-d₃
MF: C₄H₃D₃N₄O₃S₂
FW: 225.3
Chemical Purity: ≥95% (Acetazolamide)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
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

Acetazolamide-d₃ is intended for use as an internal standard for the quantification of acetazolamide 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).

Acetazolamide-d₃ is supplied as a solid. A stock solution may be made by dissolving the acetazolamide-d₃ in the solvent of choice, which should be purged with an inert gas. Acetazolamide-d₃ is soluble in methanol and DMSO.

Description

Acetazolamide is an inhibitor of carbonic anhydrase I (CAI), CAII, CAIX, and CAXII (K_s = 310, 12, 25, and 5.7 nM, respectively, for the human enzymes).¹ It inhibits the migration and invasion of Caki-1, Caki-2, and ACHN renal carcinoma cells when used at a concentration of 10 μM.² Acetazolamide (5.6 mg/kg per day) increases currents in calcium-activated potassium channels in patch clamp assays using skeletal muscle tissues isolated from potassium-deficient rats.³ It induces vasodilation and increases cerebral, renal, and hepatic blood flow and blood oxygen levels in normotensive rabbits when administered at a dose of 12 mg/kg.⁴ Formulations containing acetazolamide have been used in the treatment of edema, open-angle glaucoma, epilepsy, and acute mountain sickness.

References

1. Brzozowski, Z., Slawiński, J., Innocenti, A., et al. Carbonic anhydrase inhibitors. Regioselective synthesis of novel 1-substituted 1,4-dihydro-4-oxo-3-pyridinesulfonamides and their inhibition of the human cytosolic isozymes I and II and transmembrane cancer-associated isozymes IX and XII. *Eur. J. Med. Chem.* **45(9)**, 3656-3661 (2010).
2. Parkkila, S., Rajaniemi, H., Parkkila, A.K., et al. Carbonic anhydrase inhibitor suppresses invasion of renal cancer cells *in vitro*. *Proc. Natl. Acad. Sci. USA* **97(5)**, 2220-2224 (2000).
3. Tricarico, D., Mele, A., and Conte Camerino, D. Carbonic anhydrase inhibitors ameliorate the symptoms of hypokalaemic periodic paralysis in rats by opening the muscular Ca²⁺-activated-K⁺ channels. *Neuromuscul. Disord.* **16(1)**, 39-45 (2006).
4. Taki, K., Oogushi, K., Hirahara, K., et al. Preferential acetazolamide-induced vasodilation based on vessel size and organ: Confirmation of peripheral vasodilation with use of colored microspheres. *Angiology* **52(7)**, 483-488 (2001).

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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