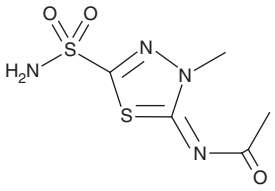
PRODUCT INFORMATION

Methazolamide

Item No. 23413

CAS Registry No.:	554-57-4
Formal Name:	N-[5-(aminosulfonyl)-3-methyl-1,3,4-thiadiazol-2(3H)-ylidene]-acetamide
MF:	$C_5H_8N_4O_3S_2$
FW:	236.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 255, 292 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

Methazolamide is supplied as a crystalline solid. A stock solution may be made by dissolving the methazolamide in the solvent of choice, which should be purged with an inert gas. Methazolamide is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of methazolamide in these solvents is approximately 15 mg/ml.

Methazolamide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, methazolamide should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Methazolamide has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Methazolamide is a carbonic anhydrase inhibitor (IC_{50} = 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 ED_{50} 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] Formulations containing methazolamide have been used for 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).

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