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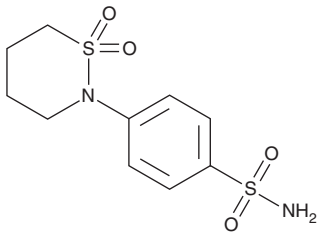
PRODUCT INFORMATION

Sulthiame

Item No. 36271

CAS Registry No.:	61-56-3
Formal Name:	4-(tetrahydro-1,1-dioxido-2H-1,2-thiazin-2-yl)-benzenesulfonamide
Synonym:	Sultiame
MF:	$C_{10}H_{14}N_2O_4S_2$
FW:	290.4
Purity:	≥95%
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

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

Description

Sulthiame is a pan-inhibitor of carbonic anhydrases (CA; K_is = 6-1,540 nM for CAI, -II, and IV-XIV) and an anticonvulsant.[1] It is selective for these CAs over CAIII (K_i = 630 µM). Sulthiame (10 µg/ml) also inhibits voltage-gated sodium currents in isolated guinea pig hippocampal CA1 neurons.[2] It reduces epileptiform activity induced by 4-aminopyridine (Item No. 18511) in guinea pig hippocampal slices when used at a concentration of 2.5 mM.[3] Sulthiame (100-300 mg/kg, i.p.) induces neuronal cell death in neonatal rats.[4] It decreases forelimb clonus duration in a rat model of partial epilepsy induced by amygdaloid kindling when administered at doses ranging from 25 to 200 mg/kg.[5] Formulations containing sulthiame have been used in the treatment of epilepsy.

References

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2. Madeja, M., Wolf, C., and Speckmann, E.J. Reduction of voltage-operated sodium currents by the anticonvulsant drug sulthiame. *Brain Res.* **900(1)**, 88-94 (2001).
3. Leniger, T., Wiemann, M., Bingmann, D., *et al.* Carbonic anhydrase inhibitor sulthiame reduces intracellular pH and epileptiform activity of hippocampal CA3 neurons. *Epilepsia* **43(5)**, 469-474 (2002).
4. Manthey, D., Asimiadou, S., Stefovska, V., *et al.* Sulthiame but not levetiracetam exerts neurotoxic effect in the developing rat brain. *Exp. Neurol.* **193(2)**, 497-503 (2005).
5. Song, H.K., Hamada, K., Yagi, K., *et al.* Effects of single and repeated administration of sulthiame on amygdaloid kindled seizures in rats. *Epilepsy Res.* **27(2)**, 81-87 (1997).

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