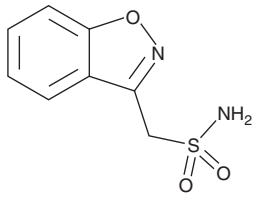
PRODUCT INFORMATION

Zonisamide

Item No. 24183

CAS Registry No.:	68291-97-4
Formal Name:	1,2-benzisoxazole-3-methanesulfonamide
Synonyms:	CI-912, PD 110843
MF:	$C_8H_8N_2O_3S$
FW:	212.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 238, 284 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

Zonisamide is supplied as a crystalline solid. A stock solution may be made by dissolving the zonisamide in the solvent of choice. Zonisamide is soluble in the organic solvent DMSO, which should be purged with an inert gas. It is also soluble in water. The solubility of zonisamide in DMSO and water is <100 and <10 mM, respectively. We do not recommend storing the aqueous solution for more than one day.

Description

Zonisamide is a broad-spectrum sulfonamide antiepileptic agent.[1] It selectively blocks the repeated firing of sodium channels (IC_{50} = 2 µg/ml) at low concentrations in mouse embryo spinal cord neurons, and it blocks spontaneous channel firing at concentrations above 10 µg/ml.[2] In rat cerebral cortex neurons, zonisamide (1-1000 µM) dose-dependently blocks T-type calcium channels with a maximum reduction of 60% of the calcium current.[3] Zonisamide inhibits recombinant *H. pylori* carbonic anhydrase (CA) and human CA isoforms I, II, and V with K_i values of 218, 56, 35, and 21 nM, respectively.[4,5] Zonisamide has anticonvulsant activity in rats, rabbits, dogs, and mice with a potency similar to phenobarbital (Item No. 9001494) and carbamazepine in maximal electroshock seizure (MES) models.[1] In mice, it has anticonvulsant activity against MES and pentylenetetrazole-induced maximal and minimal seizures with median effective doses of 19.6, 9.3, and >500 mg/kg, respectively. Zonisamide (10-100 mg/kg, p.o.) dose-dependently prevents reduction of dopamine (Item No. 21992), homovanillic acid (HVA), and dihydroxyphenyl acetic acid (DOPAC) levels and the elevation of the dopamine turnover rate induced by MPTP in mouse striatum. Formulations containing zonisamide have been used in the treatment of partial seizures in adults with epilepsy.

References

1. Masuda, Y., Ishizaki, M., and Shimizu, M. *CNS Drug Rev.* **4(4)**, 341-360 (1998).
2. Rock, D.M., Macdonald, R.L., and Taylor, C.P. *Epilepsy Res.* **3(2)**, 138-143 (1989).
3. Suzuki, S., Kawakami, K., Nishimura, S., *et al. Epilepsy Res.* **12(1)**, 21-27 (1992).
4. Nishimori, I., Vullo, D., Minakuchi, T., *et al. Bioorg. Med. Chem. Lett.* **16(8)**, 2182-2188 (2006).
5. De Simone, G., Di Fiore, A., Menchise, V., *et al. Bioorg. Med. Chem. Lett.* **15(9)**, 2315-2320 (2005).

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