



Product Information

Diazoxide

Product Number **D9035**
Store at Room Temperature

Product Description

Molecular Formula: $C_8H_7ClN_2O_2S$
Molecular Weight: 230.7
CAS Number: 364-98-7
Melting Point: 330-331 °C¹
 λ_{max} : 268 nm (methanol)
Extinction coefficient: $E^{1\%1cm} = 11.3$ (methanol)¹
Synonyms: 7-chloro-3-methyl-
2H-1,2,4-benzothiadiazine 1,1-dioxide; 3-methyl-
7-chloro-1,2,4-benzothiadiazine 1,1-dioxide¹

Diazoxide is a selective and ATP-sensitive K^+ channel activator in both vascular smooth muscle and pancreatic β -cells. It also inhibits insulin secretion by pancreatic β -cells.² The use of diazoxide and other compounds to probe the ATP-sensitive K^+ channels in the TE671 human medulloblastoma cell line has been reviewed.³

The effects of diazoxide on mitochondrial membrane potential, Ca^{2+} transport, oxygen consumption and ATP generation in mouse pancreatic β -cells and rat liver mitochondria have been probed.⁴ The role of ADP in altering the responsiveness of cardiac potassium ATP channels to diazoxide (300 μ M) has been investigated.⁵ The protective effect of diazoxide in indomethacin-induced gastric injury in rats has been studied.⁶ A study of cultured human islets with diazoxide to probe insulin release has been published.⁷

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in dimethylformamide (50 mg/ml), yielding a clear, colorless to light yellow solution. It is also soluble in DMSO (10 mg/ml) and methanol (3.2 mg/ml). It is soluble in alcohol and alkaline solutions, and insoluble in water.¹

Storage/Stability

Solutions of this product are expected to be stable at 4 °C for 24-48 hours and may be frozen for longer storage.

References

1. The Merck Index, 12th ed., Entry# 3051.
2. Martindale The Extra Pharmacopoeia, 31st ed., Reynolds, J. E. F., ed., Royal Pharmaceutical Society (London, UK: 1996), pp. 849-850.
3. Miller, T. R., et al., Pharmacological and molecular characterization of ATP-sensitive K^+ channels in the TE671 human medulloblastoma cell line. *Eur. J. Pharmacol.*, **370(2)**, 179-185 (1999).
4. Grimmsmann, T., and Rustenbeck, I., Direct effects of diazoxide on mitochondria in pancreatic B-cells and on isolated liver mitochondria. *Br. J. Pharmacol.*, **123(5)**, 781-788 (1998).
5. D'hahan, N., et al., Pharmacological plasticity of cardiac ATP-sensitive potassium channels toward diazoxide revealed by ADP. *Proc. Nat. Acad. Sci. USA*, **96**, 12162-12167 (1999).
6. Akar, F., et al., Protective effect of cromakalim and diazoxide, and proulcerogenic effect of glibenclamide on indomethacin-induced gastric injury. *Eur. J. Pharmacol.*, **374**, 461-470 (1999).
7. Song, S. H., et al., Diazoxide attenuates glucose-induced defects in first-phase insulin release and pulsatile insulin secretion in human islets. *Endocrinology*, **144(8)**, 3399-3405 (2003).

GCY/NSB 12/03

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.