

Product Data Sheet

Product Name: Alloxan (hydrate)

Cat. No.: GC45379

Chemical Properties

Cas. No. 2244-11-3

SMILES O=C(C(C(N1)=O)=O)NC1=O.O

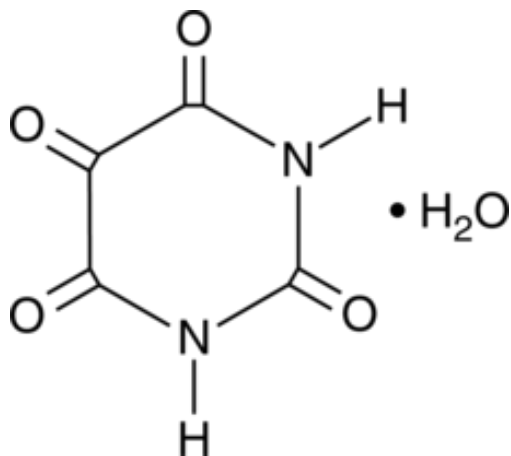
Formula C4H2N2O4.H2O M.Wt 160.1

Solubility DMF: 5 mg/ml, DMSO: 5 mg/ml, PBS (pH 7.2): 10 mg/ml Storage Store at -20°C, protect from light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

Alloxan is a toxin that selectively eliminates pancreatic β -cells in mice, rats, and certain other animals, and is used to model type 1 diabetes in humans.¹ Reduction of alloxan within β -cells precedes the generation of reactive oxygen species, which in turn contribute to β -cell death.² The dose of alloxan needed to destroy beta cells, and thus induce diabetes, depends on the animal species, route of administration, and nutritional status.^{2,3,4}

References

Caution: Product has not been fully validated for medical applications. For research use only.

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1. Dunn, J.S., Duffy, E., Gilmour, M.K., et al. Further observations on the effects of alloxan on the pancreatic islets. *Journal of Physiology* 103(2), 233-243 (1944).
2. Szkudelski, T. The mechanism of alloxan and streptozotocin action in B cells of the rat pancreas. *Physiol. Res.* 50(6), 537-546 (2001).
3. Eizirik, D.L., Pipeleers, D.G., Ling, Z., et al. Major species differences between humans and rodents in the susceptibility to pancreatic β -cell injury. *Proceedings of the National Academy of Sciences of the United States of America* 91(20), 9253-9256 (1994).
4. Tyberg, B., Andersson, A., and Borg, L.A. Species differences in susceptibility of transplanted and cultured pancreatic islets to the β -cell toxin alloxan. *General and Comparative Endocrinology* 122, 238-251 (2001).

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