Alloxan (hydrate)
Item No. 9002196

CAS Registry No.: 2244-11-3
Formal Name: 2,4,5,6(1H,3H)-pyrimidinetetrone, monohydrate
MF: C₄H₂N₂O₄ • H₂O
FW: 160.1
Purity: ≥98%
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

Alloxan (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the alloxan (hydrate) in the solvent of choice, which should be purged with an inert gas. Alloxan (hydrate) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of alloxan (hydrate) in these solvents is approximately 5 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of alloxan (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of alloxan (hydrate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

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. Reduction of alloxan within beta cells precedes the generation of reactive oxygen species, which in turn contribute to β-cell death. The dose of alloxan needed to destroy β-cells, and thus induce diabetes, depends on the animal species, route of administration, and nutritional status.

References