D-Saccharic Acid 1,4-lactone (hydrate)

Item No. 18896

CAS Registry No.: 61278-30-6
Formal Name: 1,4-lactone D-glucaric acid, monohydrate
Synonym: D-Glucaro-1,4-lactone
MF: C_6H_8O_7 • H_2O
FW: 210.1
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 216 nm

Laboratory Procedures

For long term storage, we suggest that D-saccharic acid 1,4-lactone (hydrate) be stored as supplied at -20°C. It should be stable for at least two years.

D-Saccharic acid 1,4-lactone (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the D-saccharic acid 1,4-lactone (hydrate) in the solvent of choice. D-Saccharic acid 1,4-lactone (hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of D-saccharic acid 1,4-lactone (hydrate) in these solvents is approximately 20 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 D-saccharic acid 1,4-lactone (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of D-saccharic acid 1,4-lactone (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

D-Saccharic acid 1,4-lactone is an inhibitor of β-glucuronidase (IC_{50} = 45 µM for the human enzyme).\textsuperscript{1} It is commonly used as a standard in the development of novel inhibitors of β-glucuronidase.\textsuperscript{1,2} D-Saccharic acid 1,4-lactone is also used to prevent the cleavage of glucuronides in plasma, serum, or urine by β-glucuronidase in samples.\textsuperscript{3}

References