Product Information

2-deoxy-D-Glucose
Item No. 14325

CAS Registry No.: 154-17-6
Formal Name: 2-deoxy-D-arabino-hexose
Synonyms: Ba 2758, NSC 15193
MF: C_{6}H_{12}O_{5}
FW: 164.2
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid

Laboratory Procedures
For long term storage, we suggest that 2-deoxy-D-glucose be stored as supplied at -20°C. It should be stable for at least two years.

2-deoxy-D-Glucose is supplied as a crystalline solid. A stock solution may be made by dissolving the 2-deoxy-D-glucose in the solvent of choice. 2-deoxy-D-Glucose is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 2-deoxy-D-glucose in these solvents is approximately 20 and 10 mg/ml, respectively.

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 2-deoxy-D-glucose can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 2-deoxy-D-glucose in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

2-deoxy-D-Glucose is a non-metabolizable glucose analog that inhibits phosphorylation of glucose by hexokinase, the first step of glycolysis.\(^1,2\) This results in the depletion in cellular ATP, the inhibition of protein glycosylation, and the disruption of ER quality control by inducing the unfolded protein response.\(^1\) 2-deoxy-D-Glucose has been shown to cause cell cycle inhibition and cell death in in vitro models of hypoxia, induce autophagy, increase reactive oxygen species production, activate AMPK, and block tumor cell growth in animal models.\(^2-4\)

References

Related Products
For a list of related products please visit: \texttt{www.caymanchem.com/catalog/14325}