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ProductInformation

Potassium D-gluconate

Product Number **G4500**
Store at Room Temperature

Product Description

Molecular Formula: $C_6H_{11}O_7K$
Molecular Weight: 234.2
CAS Number: 299-27-4
Melting Point: 180 °C (with decomposition)[1]
Specific Rotation: +11° (1.0 g/100 ml H_2O, 25 °C)
Synonym: D-gluconic acid potassium salt

Potassium D-gluconate, the potassium salt of gluconic acid, is used in large scale applications such as the cleaning of metal surfaces and in fertilizers. It is used in cell culture as a carbon source and as an electrolyte in neuroscience research.[1]

The use of gluconate to study ion transport in the immortalized rat submandibular cell line SMG-C6 has been described.[2] An investigation of potassium conductance in type I hair cells from rat semicircular canals has utilized potassium gluconate solutions (145 mM).[3] In a study of microperfused rabbit afferent arterioles, substitution of gluconate for chloride was shown to diminish the response to norepinephrine.[4] Potassium gluconate has been used to study ion channels from the midgut apical membrane of gypsy moth (*Lymantria dispar*) larvae and the effect of Cl^- on their activity.[5] A report on D-gluconate uptake in whole cells of *Arthrobacter pyridinolis* has been published.[6]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (50 mg/ml), yielding a clear, colorless solution.

References

1. The Merck Index, 12th ed., Entry# 7796.
2. Castro, R., et al., Ion transport in an immortalized rat submandibular cell line SMG-C6. Proc. Soc. Exp. Biol. Med., **225(1)**, 39-48 (2000).
3. Chen, J. W., and Eatock, R. A., Major potassium conductance in type I hair cells from rat semicircular canals: characterization and modulation by nitric oxide. J. Neurophysiol., **84(1)**, 139-151 (2000).
4. Jensen, B. L., et al., Chloride is essential for contraction of afferent arterioles after agonists and potassium. Am. J. Physiol., **272(3 Pt 2)**, F389-396 (1997).
5. Peyronnet, O., et al., Ion channel activity from the midgut brush-border membrane of gypsy moth (*Lymantria dispar*) larvae. J. Exp. Biol., **203 Pt 12**, 1835-1844 (2000).
6. Mandel, K. G., and Krulwich, T. A., D-Gluconate transport in *Arthrobacter pyridinolis*. Metabolic trapping of a protonated solute. Biochim. Biophys. Acta, **552(3)**, 478-491 (1979).

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