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Product Information

Magnesium chloride hexahydrate ACS Reagent

Product Number **M9272**
Store at Room Temperature

Product Description

Molecular Formula: $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
Formula Weight: 203.3
CAS Number: 7791-18-6

This product is designated as ACS Reagent grade and meets the specifications of the American Chemical Society (ACS) for reagent chemicals.

Magnesium chloride is a widely used reagent in chemistry and molecular biology as a source of magnesium ion. Magnesium has a variety of biological roles in enzymology, cell membrane and wall structural integrity, muscle cell physiology, and nucleic acid structure.^{1,2} Magnesium is an essential co-factor in many enzymes, including deoxyribonuclease (DNase), the restriction enzymes *EcoR* I and *EcoR* V, and Ribonuclease H.^{3,4} Magnesium also stabilizes polymeric nucleic acids such as transfer RNA and ribozymes.⁵

Conditions for optimal use of MgCl_2 in the polymerase chain reaction (PCR) have been investigated.^{6,7} The use of MgCl_2 in the trypsin-mediated proteolysis of the mammalian α -ketoglutarate dehydrogenase complex has been reported.⁸ A protocol that includes MgCl_2 for dideoxy-mediated sequencing reactions using bacteriophage T7 DNA polymerase has been published.⁹

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (500 mg/ml), yielding a clear, colorless solution.

References

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4. Black, C.B., and Cowan, J.A., in *The Biological Chemistry of Magnesium*, Cowan, J.A., ed., VCH Publishers (New York: 1995), pp. 137-157.
5. Lippard, S.J., and Berg, J.M., *Principles of Bioinorganic Chemistry*. University Science Books (Mill Valley, CA: 1994), pp. 192-196.
6. Harris, S., and Jones, D.B., Optimisation of the polymerase chain reaction. *Br. J. Biomed. Sci.*, **54(3)**, 166-173 (1997).
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8. McCartney, R.G., et al., Subunit interactions in the mammalian α -ketoglutarate dehydrogenase complex. Evidence for direct association of the α -ketoglutarate dehydrogenase and isohydroipoamide dehydrogenase components. *J. Biol. Chem.*, **273(37)**, 24158-24164 (1998).
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