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Product Information

1,2-Bis(2-aminophenoxy)ethane-N,N,N',N'-tetraacetic acid tetrapotassium salt

Product Number **A 9801**
Store at Room Temperature

Product Description

Formula: $C_{22}H_{20}N_2O_{10}K_4$
Molecular Weight: 628.8
CAS Number: 73630-08-7
Melting Point: approximately 250 °C
Synonym: BAPTA

This product is a highly selective Ca^{2+} chelator over Mg^{2+} . This product has a total of six possible protonation sites. All four carboxyl groups are considered unprotonated at physiologic pH; the pK_a values are below 3.0, which indicate the high acidity of the carboxyl groups.¹ As a calcium indicator, it has many advantages over EGTA including: the affinity is insensitive to pH; the product has a high buffering speed; and this product is suitable for spectrophotometric monitoring.² In fact, it is routinely used for detection of Ca^{2+} complexes spectrophotometrically.

This product is used in the preparation of solutions with free calcium in the nanomolar range.¹ It is also used in contrast with BAPTA/AM for regulation of noradrenaline release.³

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). Heating may be required for complete solubilization.

References

1. Marks, P. W., and Maxfield, F. R., Preparations of solutions with free calcium concentration in the nanomolar range using 1,2-bis(o-aminophenoxy)ethane-N,N,N',N'-tetraacetic acid. *Anal. Biochem.*, **193**, 61-71 (1991).
2. Tsien, R. Y., New calcium indicators and buffers with high selectivity against magnesium and proton: design, synthesis, and properties of prototype structures. *Biochemistry*, **19**, 2396-2404 (1980).
3. Fredholm, B. B., and Hu, P. S., Effect of an intracellular calcium chelator on the regulation of electrically evoked [3H]-noradrenaline release from rat hippocampal slices. *Br. J. Pharmacol.*, **108**, 126-131 (1993).

CMH/AJH 10/02

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