

PRODUCT INFORMATION



EGTA

Item No. 33963

CAS Registry No.: 67-42-5
Formal Name: 3,12-bis(carboxymethyl)-6,9-dioxo-3,12-diazatetradecanedioic acid

Synonyms: Egtazic Acid, Ethylene Glycol bis(β -aminoethyl ether)-N,N,N',N'-tetraacetic Acid, Ethylene Glycol Tetraacetic Acid, GEDTA, NSC 615010

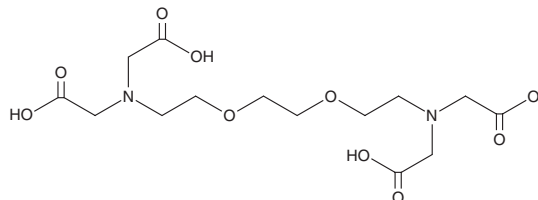
MF: C₁₄H₂₄N₂O₁₀

FW: 380.4

Supplied as: A solid

Storage: -20°C

Stability: \geq 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

EGTA is supplied as a solid. A stock solution may be made by dissolving the EGTA in the solvent of choice, which should be purged with an inert gas. EGTA is soluble in 1 M NaOH.

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 EGTA can be prepared by directly dissolving the solid in aqueous buffers. EGTA is slightly soluble PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

EGTA is an aminopolycarboxylic acid chelating agent.¹ It is selective for calcium over magnesium with K_{app} values for calcium ranging from 6.93 to 10.7 x 10⁵ M⁻¹ in various buffers at pH 6.8 and 20°C. EGTA (5 mM) inhibits apoptosis induced by the sarcoplasmic/endoplasmic Ca²⁺-ATPase (SERCA) inhibitor thapsigargin (Item No. 10522) in isolated rat thymocytes.² It has been used as an irrigation agent to remove the smear layer from the pulp canal wall on extracted human teeth.³ Intranasal administration of EGTA enhances adenovirus-mediated gene transfer of *LacZ* to the trachea and main bronchi in mice by 8-fold.⁴

References

1. Harafuji, H. and Ogawa, Y. Re-examination of the apparent binding constant of ethylene glycol bis(β -aminoethyl ether)-N,N,N',N'-tetraacetic acid with calcium around neutral pH. *J. Biochem.* **87**(5), 1305-1312 (1980).
2. Jiang, S., Chow, S.C., Nicotera, P., et al. Intracellular Ca²⁺ signals activate apoptosis in thymocytes: Studies using the Ca²⁺-ATPase inhibitor thapsigargin. *Exp. Cell. Res.* **212**(1), 84-92 (1994).
3. Viswanath, D., Hedge, A.M., and Munshi, A.K. The removal of the smear layer using EGTA: A scanning electron microscopic study. *J. Clin. Pediatr. Dent.* **28**(1), 69-74 (2003).
4. Gregory, L.G., Harbottle, R.P., Lawrence, L., et al. Enhancement of adenovirus-mediated gene transfer to the airways by DEAE dextran and sodium caprate *in vivo*. *Mol. Ther.* **7**(1), 19-26 (2003).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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