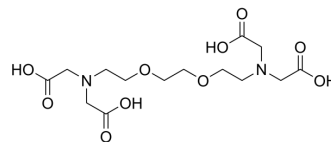


EGTA

| | | | |
|---------------------------|--|-------|----------|
| Cat. No.: | HY-D0861 | | |
| CAS No.: | 67-42-5 | | |
| Molecular Formula: | C ₁₄ H ₂₄ N ₂ O ₁₀ | | |
| Molecular Weight: | 380.35 | | |
| Target: | Biochemical Assay Reagents | | |
| Pathway: | Others | | |
| Storage: | Powder | -20°C | 3 years |
| | | 4°C | 2 years |
| | In solvent | -80°C | 6 months |
| | | -20°C | 1 month |



SOLVENT & SOLUBILITY

In Vitro

H₂O : 5 mg/mL (13.15 mM; ultrasonic and warming and adjust pH to 9 with NaOH and heat to 60°C)
 DMSO : 1 mg/mL (2.63 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent \ Mass | 1 mg | 5 mg | 10 mg |
|---------------------------|----------------|-----------|------------|------------|
| | Concentration | | | |
| 1 mM | | 2.6292 mL | 13.1458 mL | 26.2916 mL |
| 5 mM | | 0.5258 mL | 2.6292 mL | 5.2583 mL |
| 10 mM | | 0.2629 mL | 1.3146 mL | 2.6292 mL |

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

EGTA is a specific calcium ion chelator. EGTA has an apparent calcium dissociation constant (K_d) of 60.5 nM at physiological pH (7.4) and has very high specificity for Ca²⁺ over Mg²⁺ (Mg²⁺ K_d 1-10 mM). EGTA significantly inhibits the substrate adherence capacity of inflammatory macrophages^{[1][2]}.

In Vitro

EGTA, proposed as endodontic irrigant, decreases substrate adherence capacity of inflammatory macrophages in a time- and dose-dependent manner. The EGTA concentration that causes an IC₅₀ is 202 mM. Chelators react with calcium ions in the hydroxyapatite crystals to produce a metallic chelate. Removal of calcium ions from the dentine makes the dentinal tissue softer, especially the hydroxyapatite-rich peritubular dentin and increases the diameter of exposed dentinal tubules [2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell. 2023 Nov 22;186(24):5347-5362.e24.
- Cell Host Microbe. 2023 Nov 8;31(11):1792-1803.e7.
- J Clin Invest. 2024 Apr 25:e176355.
- Theranostics. 2021 Mar 24;11(12):5650-5674.
- Cancer Lett. 2023 Oct 6:216435.

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REFERENCES

[1]. Harris RA, Hanrahan JW. Effects of EGTA on calcium signaling in airway epithelial cells. Am J Physiol. 1994;267(5 Pt 1):C1426-C1434. doi:10.1152/ajpcell.1994.267.5.C1426

[2]. Segura-Egea JJ, Jiménez-Rubio A, Rios-Santos JV, Velasco-Ortega E, Calvo-Gutierrez JR. In vitro inhibitory effect of EGTA on macrophage adhesion: endodontic implications. J Endod. 2003;29(3):211-213.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA