EGTA

Cat. No.: HY-D0861

CAS No.: 67-42-5

Molecular Formula: $C_{14}H_{24}N_2O_{10}$

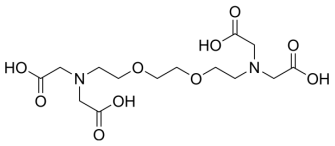
Molecular Weight: 380.35

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

H_2O : 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 (insoluble or slightly soluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
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 Ca^{2+} over Mg^{2+} (Mg^{2+} 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 IC_{50} 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.
- Theranostics. 2021 Mar 24;11(12):5650-5674.
- Cancer Lett. 2023 Oct 6:216435.
- Int J Biol Sci. 2023 Jun 4;19(9):2914-2933.

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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.

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