EGTA tetrasodium

Cat. No.: HY-D0861A

CAS No.: 13368-13-3

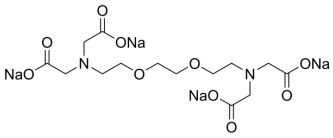
Molecular Formula: $C_{14}H_{20}N_2Na_4O_{10}$

Molecular Weight: 468.28

Target: Biochemical Assay Reagents

Pathway: Others

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	EGTA tetrasodium is a specific calcium ion chelator. EGTA tetrasodium 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 tetrasodium significantly inhibits the substrate adherence capacity of inflammatory macrophages[1][2].
In Vitro	EGTA tetrasodium, proposed as endodontic irrigant, decreases substrate adherence capacity of inflammatory macrophages in a time- and dose-dependent manner. The EGTA tetrasodium 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

- Theranostics. 2021 Mar 24;11(12):5650-5674.
- Front Immunol. 2021 Aug 31;12:701671.
- Food Funct. 05 Aug 2021.

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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.

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