Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Ethylenediaminetetraacetic acid
Cell Culture Tested

Product Number **E 6758**
Store at Room Temperature

Product Description

Molecular Formula: $C_{10}H_{16}N_2O_8$
Molecular Weight: 292.2
CAS Number: 60-00-4
pK_a: 2.0, 2.7, 6.2, 10.3[1]

Synonyms: EDTA, (Ethylenedinitrilo)tetraacetic acid

This product is cell culture tested and is appropriate for use in cell culture applications.

EDTA is an inhibitor of metalloproteases and metal-activated proteases, at effective concentrations of 1-10 mM. The product acts as a chelator of the zinc ion in the active site of metalloproteases, but EDTA can also inhibit other metal ion-dependent proteases such as calcium-dependent cysteine proteases. EDTA may interfere with biological processes which are metal-dependent.[2]

For use as an anticoagulant, disodium or tripotassium salts of EDTA are most commonly used. The optimal concentration is 1.5 mg per ml of blood. EDTA prevents platelet aggregation and is therefore the preferred anticoagulant for platelet counts.[3] From a 2% EDTA solution, 1-2 drops per ml of whole blood can be used as an anticoagulant.

A chromogenic assay for EDTA has been reported.[4]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water at room temperature up to 8 mM, which is approximately 2.3 mg in a final volume of 1 ml. The pH of this solution will be approximately 3.0 to 3.5. EDTA salts are more soluble in water as the pH increases: the more EDTA there is in the salt form, the higher the pH of a water solution, and therefore the higher the room temperature solubility. This can be achieved by gradual addition of a concentrated sodium hydroxide solution to the EDTA solution.

Storage/Stability

A stock solution of 0.5 M EDTA in water (pH 8.5) is stable for months at 4 °C.[2]

Solutions of EDTA may be autoclaved.

References

1. Data for Biochemical Research, 3rd ed., Dawson, R. M. C., et al., Oxford University Press (New York, NY: 1986), p. 404.
2. Proteolytic Enzymes: A Practical Approach, 2nd ed., Beynon, R. and Bond, J. S., eds., Oxford University Press (Oxford, UK: 2001), p. 322.
3. Clinical Hematology: Principles, Procedures, Correlations. ed. Lotspeich-Steininger, C. A., et al., Lippincott (Philadelphia, PA: 1992), p. 18.
4. Sorensen, K., An Easy Microtiter Plate-based Chromogenic Assay for Ethylenediaminetetraacetic Acid and Similar Chelating Agents in Biochemical Samples. Anal. Biochem., **206(1)**, 210-211 (1992).

GCY/RXR 4/06