BIS-TRIS propane

Product Number  B 6755
Store at Room Temperature

Product Description
Molecular Formula:  \( \text{C}_{11}\text{H}_{26}\text{N}_{2}\text{O}_{6} \)
Molecular Weight:  282.3
CAS Number:  64431-96-5
\( pK_a 1: \)  6.8 (25 °C)
\( pK_a 2: \)  9.0 (25 °C)
\( \Delta pK/\Delta T = -0.03 \)
Synonym:  1,3-bis[tris(hydroxymethyl)methylamino]propane

Bis-Tris propane is a zwitterionic buffer that is used in biochemistry and molecular biology. It has an unusually wide buffering range, from approximately pH 6 to 9.5, because its two \( pK_a \) values are close in value.

A review of DNA polymerase fidelity and its role in the polymerase chain reaction (PCR) discusses the use of Bis-Tris propane as a suitable buffer.\(^1\) The use of a Bis-Tris propane/HCl buffer for the stabilization of farnesyl diphosphate isolated from a mutant strain of \( \text{Saccharomyces cerevisiae} \) has been described.\(^2\) Bis-Tris propane buffer has been used in a study of the effects of buffer identity on electric signals of light-excited bacteriorhodopsin.\(^3\) An investigation of the MgATPase activity of the myosin subfragment 1 monomer in Bis-Tris propane buffer has been reported.\(^4\) The effect of buffer identity on the kinetics of the restriction enzyme \( \text{EcoRI} \) has been studied in various buffers, including Bis-Tris propane.\(^5\)

Bis-Tris propane has been used in protein crystallization, such as in the crystallization of glutamate dehydrogenase from the hyperthermophilic eubacterium \( \text{Thermotoga maritima} \) and of pullulanase type I from \( \text{Fervidobacterium pennivorans} \) Ven5.\(^6,7\) The analysis of Langmuir and Langmuir-Blodgett monolayers of organophosphorus acid anhydrolase in different subphases, including Bis-Tris propane buffer, has been reported.\(^8\) The preparation and phosphodiester hydrolysis activity of complexes of lanthanum and Bis-Tris propane have been investigated.\(^9\)

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

Preparation Instructions
This product is soluble in water (428 mg/ml), yielding a clear, colorless solution.

Storage/Stability
Solutions of this product are expected to be stable to autoclaving. Solutions stored at 2-8 °C are stable for months.

References