Dithiothreitol (DTT)

Cat# C3003 – 1g / C3004 – 5g

Storage at 4℃

INTRODUCTION

Dithiothreitol (DTT), like beta-mercaptoethanol, is a reducing reagent for proteins and protects the cysteine residues against oxidation. DTT is an agent for reducing -S-S- to -SH. Redox potential: -0.33 volts at pH 7. DTT acts as a protective agent for -SH groups of other species in solution. In this reaction, the DTT is oxidized to the cyclic disulfide, and thereby ensures the reduction of other disulfides in solution. The disulfide reduction is complete in minutes at pH 8. A specific and sensitive assay for disulfide groups is based on determination of resulting monothiols with 5,5'-Dithiobis(2-nitrobenzoic acid) (DTNB).

INFORMATION

Appearance: White powder

Chemical Formula: $C_4H_{10}O_2S_2$

Molecular Weight: 154.25

Melting Point: 41-42℃

Solubility: 5% in water, Clear and Colorless

Purity: 99% Min

PROTOCOL

The solubility of DTT has been tested at 50 mg/ml in water, resulting in a clear colorless solution. It has been described as freely soluble in water, ethanol, acetone, ethylate, chloroform and ether. Solutions oxidize relatively slowly in air. It is recommended to make solutions fresh daily. Recorded half-life (hours) of DTT solutions at various pH and temperatures are as follows:

Conditions (all in 0.1 M potassium phosphate buffer)	Half-life (Hours)
pH 6.5, 20 °C	40
pH 7.5, 20 °C	10
pH 8.5, 20 °C	1.4
pH 8.5 , 0 °C	11
pH 8.5, 40 °C	0.2
pH 8.5, 20 °C,+0.1 mM Cu^{2+}	0.6
pH 8.5, 20 °C, +0.1 mM EDTA	4

PRODUCT USE LIMITATION

These products are intended for research use only.