

## Dithiothreitol(DTT)

**Cat:** D8220

**Size:** 1g/5g/10g/25g/100g

**Storage:** 2-8°C storage, valid for 4 years.

### Product Parameters:

CAS: 3483-12-3

English name: 1, 4-dithio-dl-threitol; Threo-1, 4-dimercapto-2, 3-butandiol

Alias: 1, 4-dithio-DL-threitol; 1, 4-dithio-DL-threitol; 1, 4-dimercapto-2, 3-butanediol

Appearance(character) : white powder

Molecular formula: C<sub>4</sub>H<sub>10</sub>O<sub>2</sub>S<sub>2</sub>

Molecular weight: 154.25

Purity: ≥99.5%

Grade: Biotechnology Grade

Solubility: 100mg/mL in Water

### Introduction:

Dithiothreitol(DTT for short) is a small organic reducing agent that is a linear molecule in its reducing state and is oxidized into a six-membered ring structure containing disulfide bonds. DTT is a strong reducing agent whose reducibility is largely due to the conformational stability of its six-membered ring(containing disulfide bonds) in the oxidation state.

One of the uses of DTT is as a reducing agent and de-protectant for sulfhydrylated DNA. Sulfur atoms at the ends of mercaptosylated DNA tend to form dimers in solution, especially in the presence of oxygen. This dimerization greatly reduces the efficiency of some coupling reaction experiments(such as DNA fixation in biosensors); By adding DTT to DNA solution and removing it after a period of reaction, the dimerization of DNA can be reduced.

DTT is also commonly used to reduce disulfide bonds in proteins, and can be used to prevent the formation of protein intramolecular or intermolecular disulfide bonds between the cysteines in proteins. However, DTT is often unable to reduce the disulfide bonds embedded in the protein structure(not accessible to solvents), and the reduction of such disulfide bonds often requires denaturing the protein (heating at high temperature or adding denaturing agents, such as 6M guanidine hydrochloride, 8M urea or 1%SDS). On the contrary, according to the presence of DTT, disulfide bond reduction rate is different, can judge the depth of its embedding degree.

### Notes:

1. DTT is harmful to human body, please be careful when handling, and pay attention to effective protection to avoid direct contact with human body or inhalation.
2. The product information is for reference only. If you have any questions, please call 400-968-6088 for consultation.

3. This product is for scientific research only. Do not use for medicine, clinical diagnosis or therapy, food or cosmetics. Do not store in ordinary residential areas.
4. For your safety and health, please wear a lab coat and wear disposable gloves and a mask.

**Related Products:**

*D1070 1M DTT solution/dithiothreitol*

*P1040 5×Protein Loading buffer(including DTT)*

*P1015 4×Protein Loading buffer(including DTT)*

*P1018 2×Protein Loading buffer(including DTT)*