Specification

DTT *BioChemica* A1101

Solubility:	1500 g/L (H_2O)
Physical Description:	Solid
Product Code:	A1101
Product Name:	DTT *BioChemica*
Headline Comment:	**Attention:** Product may form lumps when stored. Material is highly hygroskopic! Storage at 2°-8°C under inert gas! Open only under inert gas!
Specifications:	Assay (iodometr.): min. 99.5 % pH (0.1 M; H_2O; 20°C): 4.0 - 6.0 Melting point: 40 - 44°C DTT (oxidized): max. 0.5 % Loss on drying: max. 0.5 % A (1 cm/0.02 M in H_2O) 283 nm: max. 0.05
Hazard pictograms	
WGK:	1
Storage:	2 - 8°C under inert gas
Shipment:	wet ice in Germany, dry ice to abroad
Signal Word:	Attention
GHS Symbols:	GHS07
H Phrases:	H302 H315

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Specification

DTT *BioChemica* A1101

	H319
P Phrases:	P302+P350 P305+P351+P338
Molecular Formula:	$C_4H_{10}O_2S_2$
M:	154.25 g/mol
CAS:	3483-12-3
EINECS:	222-468-7
CS:	29309098

Comment

Dithiothreitol (DTT) is, like β-mercaptoethanol, a reducing reagent for proteins and protects the cysteine residues against oxidation. It may substitute for β-mercaptoethanol in almost all experiments at three to four fold lower concentrations. DTT is less toxic, its odor is less intensive and it doesn't form mixed disulfides like β-mercaptoethanol. DTT is water-soluble and stock solutions are prepared at 1 M. Store the solution aliquoted at -20°C and protect from heat during the experiment. Do not choose a to low concentration for the experiment, because it is readily oxidized by air. The working concentration ranges from 0.1 to 1 mM, but the preparation of plant extracts (5 mM; ref. 4) or for the 'large scale *in situ* isolation' of proteins after fermentation (10 mM; ref. 5) require higher concentrations. For the complete reduction of disulfides, the concentration might be significantly higher (3).A more stable and odorless alternative to DTT is Tris(2-carboxy)ethylphosphine (A2233).

Bibliography

(1)Cleland, W.W. (1964) *Biochemistry* **3**, 480-482Dithiothreitol, a new protective reagent for SH groups. (2)Zahler, W.L. & Cleland, W.W. (1968) *J. Biol. Chem.* **243**, 716-719A specific and sensitive assay for disulfides. (3)Jocelyn, P.C. (1987) *Methods Enzymol.* **143**, 246-256Chemical reduction of disulfides. (4)Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193Preparation of plant extracts. (5)Hart, R.A. *et al*. (1994) *Bio/Technology* **12**, 1113-1117'Large scale *in situ* isolation' o periplasmatic IGF-I from *E. coli.*

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