



Specification

Sodium Diethyldithiocarbamate 3-hydrate *BioChemica*

A2171

Physical Description:	Solid
Product Code:	A2171
Product Name:	Sodium Diethyldithiocarbamate 3-hydrate <i>BioChemica</i>
Specifications:	Assay (titr.): min. 99 % Heavy metals: max. 0.001 % Sulfated ash: 30 - 33 %
Hazard pictograms	 
UN:	3077
Class/PG:	9/III
ADR:	9/III
IMDG:	9/III
IATA:	9/III
WGK:	2
Storage:	2-8°C
Signal Word:	Attention
GHS Symbols:	GHS07 GHS09
H Phrases:	H302 H400
P Phrases:	P264 P270

AppliChem GmbH

Ottoweg 4 • D-64291 Darmstadt • Phone +49 6151 9357 0 • Fax +49 6151 9357 11 • info.de@itwreagents.com • www.itwreagents.com
CEO Joan Roget • Commerzbank Darmstadt • Bank 508 800 50 • Account 0186989900 IBAN DE24 5088 0050 0186 9899 00 • Swiftcode DRESDEFF508 • Finanzamt Darmstadt 07 228 16476 • Register court Darmstadt HRB Nr. 7340

Specification

Sodium Diethyldithiocarbamate 3-hydrate *BioChemica*

A2171

	P273 P301+P312 P330 P501
Molecular Formula:	$C_5H_{10}NNaS_2 \cdot 3H_2O$
M:	225.31 g/mol
CAS:	20624-25-3
EINECS:	205-710-6
CS:	29302000
Comment	<p>Diethyldithiocarbamate (DDC) is a thiol compound, which has the property of an anti-oxidizing agent and reacts as a complexing agent for divalent ions. It forms non-toxic, stable compounds with benzoquinoneimines (alkylating agents) and prevents the alkylation of glutathione and probably any thiol group in proteins (1). DDC chelates ions like manganese (3) and copper (5, 6). Due to this enzymes depending on metal ions are inhibited. DDC incubation of superoxide dismutase derived from erythrocytes results in a yellowish brown color and in an inhibition of the enzyme. The addition of copper ions reactivates the enzyme. Staining of this enzyme in the polyacrylamide gel is possible (10 mM DDC in electrophoresis buffer, measured at 448 nm, ref. 5). Due to its anti-oxidizing properties DCC is used during the treatment of HIV infections. DDC also inhibits the induction of NO-Synthetase, probably due to the inhibition of the transcription factor NFkB (4).</p>
Bibliography	<p>(1)Lauriault, V.V.M. & O'Brien P.J. (1991) <i>Mol. Pharmacol.</i> 40, 125-134Molecular mechanism for prevention of N-Acetyl-p-benzoquinoneimine by the permeable thiol drug Diethyldithiocarbamate and Dithiothreitol. (2)Hosni, M. <i>et al.</i> (1992) <i>Biochem. Pharmacol.</i> 43, 1319-1329Diethyldithiocarbamate effect on arachidonic acid metabolism in human mononuclear cells. (3)Ramanaiah, M. & Venkaiah, B. (1992) <i>Biochem. Int.</i> 26, 113-123Characterization of Superoxide Dismutase from south indian scorpion venom. (4)Mülsch, A. <i>et al.</i> (1993) <i>FEBS Lett.</i> 321, 215-218Diethyldithiocarbamate inhibits induction of macrophage NO synthetase. (5)Jewett, S.L. & Rocklin, A.M. (1994) <i>Anal. Biochem.</i> 217, 236-240N,N'-Diethyldithiocarbamate as a stain for Copper-Zinc Superoxide Dismutase in polyacrylamide gels of red cell extracts. (6)Jewett, S.L. & Rocklin, A.M. (1996) <i>Anal. Biochem.</i> 237, 65-69Two applications using N,N'-Diethyldithiocarbamate as a stain for Copper in native polyacrylamide gels of Superoxide Dismutase.</p>

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