

Specification

Polyethylene glycol 8000 BioChemica

A2204

Physical Description:	Solid
Product Code:	A2204
Product Name:	Polyethylene glycol 8000 <i>BioChemica</i>
Specifications:	Average M: 7000 - 9000 Solubility (5 %; H ₂ O): clear, colorless pH (5 %; H ₂ O; 20°C): 5.5 - 7.0 Heavy metals: max. 0.005 %
WGK:	1
Storage:	RT
Molecular Formula:	HO(C ₂ H ₄ O) _n H
CAS:	25322-68-3
EINECS:	500-038-2
CS:	34042000
Comment	<p>The kinetic of the ligation in the cloning of DNA-fragments into bacteriophage M13-vectors can be improved by the inclusion of 5 % polyethylene glycol 8000 (PEG 8000; ref. 2). Especially for the cloning with 'blunt-ended' DNA, the concentration of 'blunt'-DNA-ends plays a crucial role for the successful cloning. Substances, that increase the so-called 'macromolecular crowding' and condense DNA molecules into aggregates, concentrate the DNA and increase the possibility, that DNA ends will meet and thereby improve the cloning result (1,2). So, the DNA and enzyme concentration can be reduced. Besides, such substances reduce the intramolecular ligation (religation). For 'blunt end' cloning the recommended PEG 8000 concentration is 15 %. Stock solutions of PEG 8000 (40 %) are prepared with deionized water and stored at -20°C in small aliquots.</p>
Bibliography	<p>(1) Zimmerman, S.B. & Harrison, B. (1985) <i>Nucleic Acids Res.</i> 13, 2241-2249 'Macromolecular crowding' increases the cohesion of DNA with complementary ends. (2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) <i>Molecular Cloning: A Laboratory Manual</i>, 2nd Edition; Pages 1.70, 1.71, 4.35; Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York. (3) Odom, O.W. <i>et al.</i> (1997) <i>Anal. Biochem.</i> 245, 249-252 An effect of PEG 8000 on the mobility of proteins in SDS-PAGE and a method to eliminate these effects.</p>

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