Phenol equilibrated, stabilized

stabilized with 0,1 % 8-hydroxyquinoline (w/v); equilibrated with Tris buffer
Product No. A1153

Description

CAS-Nr.:	[108-95-2]
Assay (Titr.):	approx. 75 %
Water (K.F.):	approx. 25 %
pH (20°C):	7.6 - 8.0
Storage:	+4°C protected from light, under argon

Comment

For the efficient extraction of DNA, the use of equilibrated, stabilized Phenol with a high pH (pH approx. 7.5 - 8.0) is important. At low pH values (pH <6) DNA will be retained in the organic phase and interphase, leaving RNA in the aqueous phase. The salt concentration should not remain under 50 mM, because oligomers, in particular, may be lost to the phenol phase. If the salt concentration is to high, an inversion of organic and aqueous phase may occur. The addition of the antioxidant 8-hydroxyquinoline facilitates the identification of the organic phase by its bright yellow color and has the additional advantages of reducing the rate of phenol oxidation and the partial inhibition of ribonucleases. To improve the dissociation of proteins from nucleic acids, which is the fundamental aim of a phenol extraction, the use of chloroform in conjunction with phenol has been shown to increase the yield of nucleic acids. Chloroform denatures proteins (like phenol) and enhances the separation of the organic and aqueous phases. Other advantages are the removal of lipids by chloroform and a reduction of the amount of water retained in the organic phase.

Phenol has a very limited shelf life and its stability is additionally reduced by a high pH. Its 'quality' can be monitored by a change of the color from colorless to pink/red. Such pink/red solutions should not be used, since the oxidized products of phenol may lead to strand breaks of nucleic acids. We recommend the use of stabilized phenol solutions (8-Hydroxychinolin as an antioxidant). Phenol from AppliChem is bottled under argon. Stocks may be stored frozen in the dark at -20°C in PE tubes.

Application and Literature

(1)Large- and small-scale phenol extractions. (Wallace, D.M. (1987) *Methods Enzymol.* **152**, 33-48)
(2)Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology.* Supplement 35 Pages 2.1.1-2.1.7; Greene Publishing & Wiley-Interscience, New York)
(3)Sambrock, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning:* A Laboratory Manual, 2nd Edition. Pages E.3-E.4. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

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