Product Information

Sephadex® G-25

Fine

G2580

Product Description

Sephadex® is a beaded gel filtration medium prepared by cross-linking dextran with epichlorohydrin under alkaline conditions.[1] General information and procedures for using gel filtration to separate proteins or to desalt protein solutions have been described.[2,3]

This product can also be used for the separation of double-stranded DNA fragments. The exclusion limits for double-stranded DNA are as follows:

- G-25: 10 base pairs
- G-50: 20 base pairs
- G-100: 25 base pairs

DNA grade Sephadex® is available as part of our molecular biology product line, in the following Cat. Nos.:

- S5772 (G-25 Superfine)
- S5897 (G-50 Fine)
- S6022 (G-50 Medium)
- S6147 (G-100)

Cat. No. G2580 is an exact replacement for past Cat. Nos. 84942 and 27107-1.

Preparation Instructions

- This product should be placed in the usage buffer and allowed to swell for at least 3 hours at 20 °C or 1 hour at 90 °C.
- Once separation of the sample is complete, the gel should be washed with 2 column volumes of 0.2 M NaOH or a solution of non-ionic detergent, rinsed with water, and re-equilibrated with 2-3 column volumes of buffer.
- For storage, antimicrobial agents (such as 20% ethanol or 0.02% sodium azide) should be added to the suspension to prevent contamination.
- When necessary, the gel can be removed from the column and sterilized by autoclaving.
- The washed resin may then be resuspended in excess water or starting buffer, to pack the column bed.

Storage/Stability

Sephadex® does not melt and may be sterilized in its wet form at neutral pH by autoclaving for 30 minutes at 120 °C. This will not affect its chromatographic properties. However, if dry Sephadex® is heated to more than 120 °C, it will start to caramelize.

Sephadex® is stable in water, salt solutions, and organic and denaturing solvents. The pH stability is limited to low ionic strengths and short times when at the pH extremes of 2 and 13, particularly in the acid range. At low pH, partial hydrolysis of the matrix may occur. However, G-25 has been shown to withstand 0.1 M HCl for 1-2 hours and 0.02 M HCl for 6 months without any effect on its chromatographic properties.

Sephadex® resins are chemically resistant to 8 M urea. However, since such solutions would be very viscous, the flow rate would be much reduced in the presence of 8 M urea, and would lead to high back pressure. The beads are not able to withstand increased pressure to get a reasonable flow rate. In such cases, Sephacryl® resins should be used. Sephacryl® is more rigid and can withstand higher pressures. The Sephacryl® resin is also resistant to 8 M urea.

References

1. Porath, J., and Flodin, P., *Nature*, **183(4676)**, 1657-1659 (1959).
2. Stellwagen, E., *Meth. Enzymol.*, **182**, 317-328 (1990).
3. Ausubel, F.M. *et al*. (eds.), *Short Protocols in Molecular Biology*, 2nd edition. John Wiley & Sons (New York, NY), pp. 10-36 to 10-39 (1992).

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