Product Information

Sephadex® G-100

BioReagent, for molecular biology, DNA grade, Medium

S6147

Product Description

Sephadex® G-100, Medium is a gel filtration chromatography product for desalting and buffer exchange of very large molecules. Sephadex® is prepared by crosslinking dextran with epichlorohydrin. Sephadex® products differ in their degree of cross-linking and thus in their degree of swelling and their molecular fractionation range. On the general term "Sephadex" and other aspects of Sephadex® products:

- "Se" refers to "separation", and "dex" to dextran.[1]
- "G" refers to "Gel".[1]
- The G-number in a given Sephadex® listing refers to the water regain of the gel multiplied by 10, where water regain is defined as the maximum amount of grams of water taken up by 1 g of "dry xerogel".[1]
- The designation "Medium" indicates a large particle size for use in large-scale group separations where high flow rates and low operating pressures are required.

Several publications have cited use of this product.[2-3]

Product Summary

Bed volume[4]: 15-20 mL/g dry Sephadex

DNA exclusion limit[4]: 25 bp

Recommended pH range[4]: 2-10

Swelling time[4]: 72 hours at 20 °C, or 5 hours at 90 °C

DNase and RNase: None detected

Details on nuclease testing

The nuclease tests below use supernatant that has been isolated after centrifuging a resuspension of the Sephadex beads in water, at 30 mg beads per 1 mL of water, with overnight incubation at 2-8 °C. Small aliquots of the supernatant are used in these nuclease tests.

Endonuclease-exonuclease:

One µg of λ Hind III fragments was incubated in an aliquot of the Sephadex® supernatant for 16-18 hours at 37 °C, in a 50 µL reaction mixture containing 30 mM Tris-HCl (pH 7.8), 50 mM NaCl and 10 mM $MgCl_2$. No degradation of the DNA fragments was detected by agarose gel electrophoresis.

Endonuclease (Nickase):

One µg of pBR322 DNA was incubated in an aliquot of the Sephadex® supernatant for 16-18 hours at 37 °C, in a 50 µL reaction mixture containing 30 mM Tris-HCl (pH 7.8), 50 mM NaCl and 10 mM $MgCl_2$.
No conversion of the covalently closed circular DNA to the nicked or linear form was observed by agarose gel electrophoresis.

RNase:

Two µg of transfer RNA were incubated in an aliquot of the Sephadex® supernatant for 16-18 hours at 37 °C, in a 50 µL reaction mixture containing 30 mM Tris-HCl (pH 7.8), 50 mM NaCl and 10 mM $MgCl_2$.
No degradation of the tRNA was detected by polyacrylamide gel electrophoresis.

References

1. Janson, J.-C., *Chromatographia*, **23(5)**, 361-369 (1987).
2. Al-Qahtani, A.N. *et al.*, *Int. Res. J. Agr. Sci. Soil Sci.*, **3(5)**, 156-168 (2013).
3. Murta, V. *et al.*, *J. Neurochem.*, **144(6)**, 748-760 (2018).
4. Supplier information.

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