SIGMA-ALDRICH®
sigma-aldrich.com
3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Sephadex® G-100
BioReagent, for molecular biology, DNA grade, Medium

Catalog Number **S6147**
Store at Room Temperature

CAS Number: 9050-94-6

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]

Precautions and Disclaimer

For Research use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

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

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.

Details on nuclease testing:
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.

Sephadex is a registered trademark of Cytiva.

GCY,KT 04/21-1