SERVA Electrophoresis

PRODUCT INFORMATION

Cellulase R-10 from *Aspergillus niger* Cat. No. 16421

Product Description:

General	A multi-component enzyme system[1] with high cellulose activity Cellulase is able to decompose natural (e.g. filter paper) as well as modified celluloses (e.g. carboxymethyl cellulose). It hydrolyses 1,4-β-D-glucosidic linkages in cellulose, lichenin and cereal β-D-glucans. In nature, cellulose is found in association with other components e.g. hemi-cellulose, lignin and pectin. SERVA cellulases contain a number of other activities, which assist in breaking down these components and degrading cell walls. α-Amylase hydrolyses 1,4-α-D-glucosidic linkages in polysaccharides containing three or more 1,4-α-linked D-glucose units. Pectinase randomly cleaves 1,4-α-D galactosiduronic link-ages in galacturans. Contains as well hemicellulase and protease activities.
Application	• Isolation of plant protoplasts[2] for its ability to degrade cell walls, often in combination with Macerozyme R-10 (cat. no. 28032) • Carbohydrate analysis
Features	• Lyophilisate activity: ca. 1 U/mg* • Temperature optimum: 40 – 50 °C • Optimal pH: 4 - 5 (activity range 3 - 7) • Extraneous activities: α-amylase ca. 0.8 U/mg, hemicellulase ca. 1 U/mg, pectinase ca. 0.4 U/mg, protease ca. 0.01 DMC-U/mg
Stability and Storage	Lyophilisate should be stored at a dry place in a tightly closed container at +2 °C to +8 °C. Cellulase solutions are stable at pH 5 – 7 at 4 °C for 24 h. Activity is completely destroyed after 10 – 15 minutes at 80 °C.
Inhibition/ Inactivation	Cellulase is inhibited by its reaction products e.g. glucose, cellobiose. Hg^{2+} inhibits the activity completely, whereas Mn^{2+}, Ag^{2+}, Zn^{2+} and Cu^{2+} are only slightly inhibitory.

*__Unit definition:__ 1 U catalyses the liberation of 1 µmol glucose from sodium carboxymethyl cellulose per minute at 40 °C, pH 4.5; glucose is determined with alkaline copper reagent[3].

[1]Beldman, G. et al. (1985) Eur. J. Biochem. 146, 301 - 308
[2]Potrykus, J. & Shillito, R. D. (1986) Methods Enzymol. 118, 549 – 578
[3]Okada, G. (1988) Methods Enzymol. 160, 259 – 263

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