# PRODUCT INFORMATION

## Cellulase „Onozuka“ RS®
## from *Trichoderma viride* Art.-No. 16420

## Product Description:

**Trademark**

Onozuka RS® is a registered trademark of Yakult Pharmaceuticals Industry Co., Ltd..

**General**

A multi-component enzyme system[1] with high cellulose activity. Contains about three times as high xylanase activity as Cellulase “Onozuka” R-10 (cat. no. 16419).

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. hemicellulose, 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 linkages in galacturans. Contained are as well hemicellulase and protease activities.

**Features**

- Lyophilisate activity: ca. 2 U/mg*
- Temperature optimum: 50 – 60 °C
- Optimal pH: 4 - 5 (activity range 3 - 7)
- Extraneous activities: α-amylase, hemicellulase, pectinase, protease

**Stability/ 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.

**Application**

Isolation of plant protoplasts[2] for its ability to degrade cell walls, often in combination with Macerozyme R-10 (art. no. 28032).

**Inhibition/ Inactivation**

Cellulase is inhibited by its reaction products e.g. glucose, cellobiose. $Hg^{2+}$ inhibits the activity completely, whereas $Mn^{+}$, $Ag^{2+}$, $Zn^{2+}$ 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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