

Native *Rhodothermus marinus* Laminarinase/Lichenase

Cat. No. NATE-0376

Lot. No. (See product label)

Introduction

Description β -glucanases degrade β -1,4-glucans of cellulose, xyloglucan and β -1,4-xylan. β -Glucanase represents a group of carbohydrate enzymes which break down glycosidic bonds within beta-glucan. It forms the main constituent of fungal cell walls and could be a potential structural and storage polysaccharide of marine macro-algae. It has the ability to degrade fungal cell walls and may be involved in defense mechanism of plants against pathogenic fungi.

Synonyms endo-1,3- β -D-glucanase; laminarinase; laminaranase; β -1,3-glucanase; β -1,3-1,4-glucanase; endo-1,3- β -glucanase; endo- β -1,3 (4)-glucanase; endo- β -1,3-1,4-glucanase; endo- β -(1 \rightarrow 3)-D-glucanase; endo-1,3-1,4- β -D-glucanase; endo- β -(1-3)-D-glucanase; endo- β -1,3-glucanase IV; endo-1,3- β -D-glucanase; 1,3-(1,3; 1,4)- β -D-glucan 3 (4)-glucanohydrolase; EC 3.2.1.6; 9074-98-0

Product Information

Source *Rhodothermus marinus*

EC Number EC 3.2.1.6

CAS No. 62213-14-3

Optimum pH the enzyme has optimum activity around pH 7

Thermal stability The β -galactosidase heat stability at 70,80 and 91°C

Optimum temperature the enzyme has optimum activity around 80°C

Structure The crystal structure of Laminarinase from *Rhodothermus marinus* (96% sequence identity with Bglu110 Laminarinase/Lichenase) has been determined to 1.9 Å resolution. - PDB entry 3ILN

Specificity The molecule laminarin (also known as laminaran) is a storage glucan produced in brown algae through photosynthesis. The polysaccharide is made up of glucose residues with β -1,3-linkages and β -1,6-linkages. It is a linear polysaccharide, with a β (1 \rightarrow 3): β (1 \rightarrow 6) ratio typically 3:1 but the ratio may vary with the source of the polysaccharide. Lichenin, also known as lichenan or moss starch, is a complex glucan occurring in certain species of lichens and consists of repeating glucose units linked by β -1,3 and β -1,4 glycosidic bonds. It can be extracted from *Cetraria islandica* (Iceland moss). Scleroglucan, is formed by the fungus *Sclerotium rolfsii*. A chemically analogous polysaccharide, Schizophyllan (Sizofiran, Sonifilan, SPG) is a neutral extracellular polysaccharide produced by the fungus *Schizophyllum commune*. Schizophyllan is a β -1,3 beta-glucan with β -1,6 branching. Both polysaccharides share the chemical structure of the backbone with curdlan.

Unit Definition One unit (U) of enzyme activity is the amount that leads to the release of 1 μ mol reducing sugars per minute.