Creative Enzymes®

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→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 ß-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 withβ-1,3-linkages and β-1,6-linkages. It is a linear polysaccharide, with a β (1→3):β (1→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 lichensandconsists 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 μmol reducing sugars per minute.