



β-GLUCOSIDASE from *Aspergillus niger* (Lot 90301)

E-BGLUC

06/03

PROPERTIES

(1) ELECTROPHORETIC PURITY

- single band on SDS-gel electrophoresis (MW = 121,000).
- single major band on Isoelectric focusing (pI = 4.0)

(2) SPECIFIC ACTIVITY AND LEVEL OF OTHER ACTIVITIES

One unit of enzyme activity is defined as the amount of enzyme required to release one micromole of *p*-nitrophenol from *p*-nitrophenyl β-glucoside in one minute at 40°C and pH 4.0. Glycosidase activities were measured using the appropriate *p*-nitrophenyl glycoside (at 10mM), and *endo*-glycanase activities were determined with the appropriate substrate (10mg/ml) and using the Nelson/Somogyi reducing sugar procedure.

ENZYME ACTIVITY	SUBSTRATE	ACTIVITY (U/mg protein)
β-Glucosidase	<i>p</i> -NP-β-Glucoside	49
β-Glucosidase	Cellobiose	112
-Amylase	Starch	< 0.001
Amyloglucosidase	Starch	< 0.004
Maltase	Maltose	< 0.005
<i>endo</i> -1,4-β-Glucanase	CM-Cellulose	< 0.001
Invertase	Sucrose	0.10

(3) RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES

SUBSTRATE	RELATIVE HYDROLYSIS RATE
Cellobiose	100
Cellotriose	109
Cellotetraose	89
Gentiobiose	53
Sophorose	43
1,4-β-D-Glucosyl-D-mannose	35
Methyl-β-D-glucopyranoside	15
<i>p</i> -Nitrophenyl β-glucopyranoside	46
<i>p</i> -Nitrophenyl β-xylanopyranoside	1.2
<i>p</i> -Nitrophenyl -glucopyranoside	< 0.1

pH Optima:	4.0	Temperature Optima:	70°C
pH Stability:	2.5-7.5	Temperature Stability:	Unstable above 60°C