



exo-1,4-β-D-XYLOSIDASE from *B. pumilus* (Lot 120202b)

Recombinant

E-BXSEBP

06/14

(EC 3.2.1.37) exo-1,4-β-D-xylosidase; 1,4-β-D-xylan xylohydrolase
CAZy: GH Family 43

PROPERTIES

1. ELECTROPHORETIC PURITY

- Single band on SDS-gel electrophoresis (MW ~ 61,190)
- Single major band on isoelectric focusing (pI ~ 5.7)

2. SPECIFIC ACTIVITY

18.2 U/mg protein at pH 7.5 and 35°C

~ 40 U/mg protein at pH 7.5 and 35°C on xylobiose

One Unit of β-xylosidase activity is defined as the amount of enzyme required to release one μmole of *p*-nitrophenol (*p*-NP) per minute from *p*-nitrophenyl-β-D-xylopyranoside (5 mM) in potassium phosphate buffer (50 mM), pH 7.5 at 35°C.

3. OTHER ACTIVITIES (as a percentage of β-xylosidase activity)

Enzyme Measured	Substrate	%
β-D-Xylosidase	<i>p</i> -NP-β-D-xyloside	100
α-L-Arabinofuranosidase	<i>p</i> -NP-α-L-arabinofuranoside	2.0
α-L-Arabinopyranosidase	<i>p</i> -NP-α-L-arabinopyranoside	< 0.02
β-D-Glucosidase	<i>p</i> -NP-β-D-glucoside	< 0.01
α-D-Galactosidase	<i>p</i> -NP-α-D-galactoside	< 0.01
β-D-Galactosidase	<i>p</i> -NP-β-D-galactoside	< 0.002
α-D-Mannosidase	<i>p</i> -NP-α-D-mannoside	< 0.004
β-D-Mannosidase	<i>p</i> -NP-β-D-mannoside	< 0.01

Action on *p*-NP-substrates was determined at a final substrate concentration of 5 mM in potassium phosphate buffer (50 mM), pH 7.5 at 35°C.

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES

Substrate	Relative Hydrolysis Rate
Xylobiose	100*
Xylotriose	114
Xylotetraose	61
Xylopentaose	55
Xylohexaose	47
Arabinobiose	3*
Sugar Beet Arabinan	0

Action on oligosaccharide and polysaccharide substrates was determined at a final substrate concentration of 5 mM and 10 mg/mL, respectively, in Tris.HCl buffer (100 mM), pH 7.0 at 35°C.

* Hydrolysis of xylobiose and arabinobiose releases two xylose and arabinose molecules, respectively. This is accounted for in the calculation of the Relative Hydrolysis Rate.

5. PHYSICOCHEMICAL PROPERTIES

pH Optimum: 7.5
Temperature Optimum: 35°C

6. STORAGE CONDITIONS

The enzyme is supplied as an ammonium sulphate suspension in 0.02% (w/v) sodium azide and should be stored at 4°C. For assay, this enzyme should be diluted in potassium phosphate buffer (50 mM), pH 7.5 containing 1 mg/mL BSA.

Swirl to mix the enzyme immediately prior to use.