β-D-XYLOSIDASE from *S. ruminantium* (Lot 100301f)

Recombinant

E-BXSR-3KU **06/18**

(EC 3.2.1.37) xylan 1,4-beta-xylosidase; 4-beta-D-xylan xylohydrolase
CAZy Family: GH43
CAS: 9025-53-0

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 61,900)
- One major band on isoelectric focusing (pI ~ 5.4)

2. SPECIFIC ACTIVITY:

118 U/mg protein (on *p*-NP-β-D-xyloside) at pH 5.3 and 40°C
~ 300 U/mg protein (on xylobiose) at pH 5.3 and 40°C

One Unit One Unit of β-xylosidase activity is defined as the amount of enzyme required to release one µmole of p-nitrophenol per minute from p-nitrophenyl-β-D-xylopyranoside (5 mM) in sodium succinate buffer (50 mM), pH 5.3 at 40°C.

3. SPECIFICITY:

Hydrolysis of (1,4)-β-D-xylans and xylo-oligosaccharides to remove successive D-xylose residues from non-reducing termini.

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	%
p-NP-β-D-xyloside	100
p-NP-α-L-arabinofuranoside	~ 7.0
p-NP-β-L-arabinopyranoside	< 0.01
p-NP-α-D-glucopyranoside	< 0.01
p-NP-β-D-glucopyranoside	< 0.01
p-NP-β-D-glucuronide	< 0.01
p-NP-α-D-xyloside	< 0.01
p-NP-α-D-galactopyranoside	< 0.01
p-NP-β-D-galactopyranoside	< 0.01
p-NP-α-D-mannopyranoside	< 0.01
p-NP-β-D-mannopyranoside	< 0.01

Action on *p*NP-substrates was determined at a final substrate concentration of 5 mM in sodium succinate buffer (50 mM), pH 5.3 at 40°C.

5. PHYSICOCHEMICAL PROPERTIES:

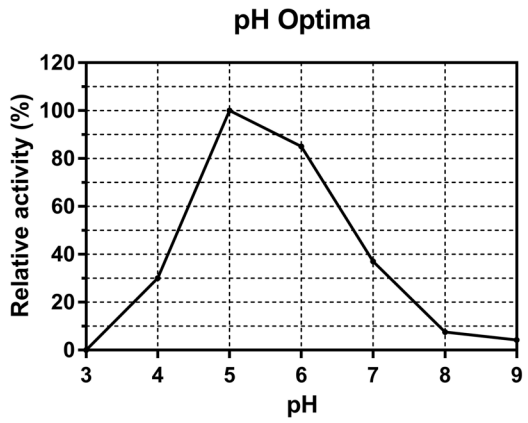
Recommended conditions of use are at pH 6.0-7.5 and up to 40°C

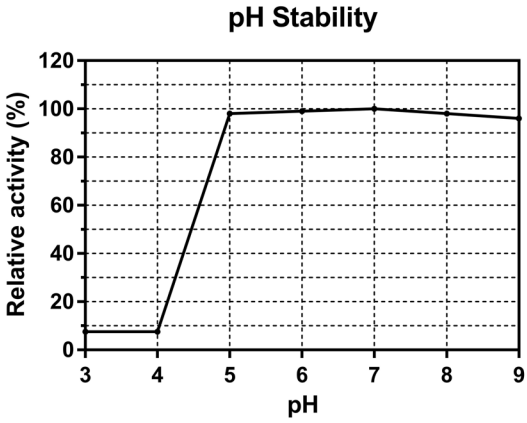
pH Optima:	5.0
pH Stability:	5.0-9.0 (> 75% control activity after 24 h at 4°C)
Temperature Optima:	50°C (10 min reaction)
Temperature Stability:	up to 50°C (> 75% control activity after 15 min incubation at temperature)

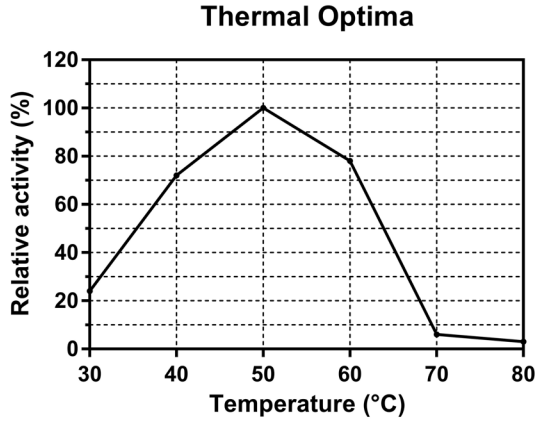
6. STORAGE CONDITIONS:

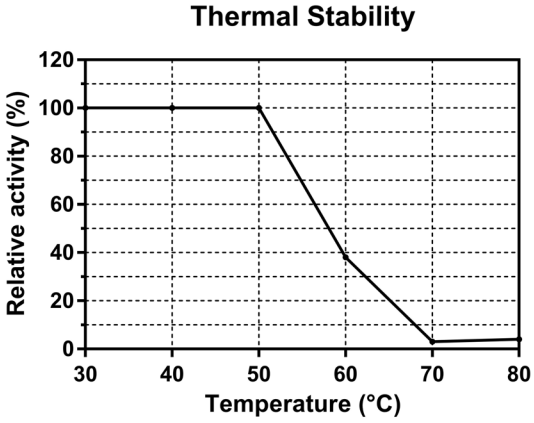
The enzyme is supplied as an ammonium sulphate suspension containing 0.02% (w/v) sodium azide and should be stored at 4°C. For assay, this enzyme should be diluted in sodium succinate buffer (50 mM), pH 5.3 containing 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**

7. EXPERIMENTAL DATA:









8. REFERENCES:

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Jordan, D. B. & Li, X-L. (2007). Variation in relative substrate specificity of bifunctional β-D-xylosidase/ α-L-arabinofuranosidase by single-site mutations: Roles of substrate distortion and recognition. *Biochimica et Biophysica Acta* **1774**, 1192–1198.

Jordan, D. B., Li, X-L., Dunlap, C. A., Whitehead, T. R. & Cotta. M. A. (2007). Structure–function relationships of a catalytically efficient β-D-xylosidase. *Appl. Biochem. Biotechnol.* **141**, 51–76.

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