



exo-1,3-β-GLUCANASE from *Aspergillus oryzae* (Lot 110601a)

Recombinant

E-EXG5AO

03/13

(EC 3.2.1.58) glucan 1,3-beta-glucosidase; 3-beta-D-glucan glucohydrolase
CAZy: GH Family 5

PROPERTIES

1. ELECTROPHORETIC PURITY

- Single band on SDS-gel electrophoresis (MW ~ 43,800)
- Single major band on isoelectric focusing (pI ~ 4.9)

2. SPECIFIC ACTIVITY

376 U/mg protein (on laminarin) at pH 5.0 and 50°C; 280 U/mg protein (on laminarin) at pH 5.0 and 40°C.

One Unit of exo-1,3-β-glucanase activity is defined as the amount of enzyme required to release one μmole of glucose reducing sugar equivalents per minute from laminarin (*Laminaria digitata*) (5 mg/mL) in sodium acetate buffer (100 mM) at pH 5.0 and 40°C.

62 U/mg protein (on pNP-β-D-glucopyranoside) at pH 5.0 and 40°C.

One Unit of exo-1,3-β-glucanase activity is defined as the amount of enzyme required to release one μmole of *p*-nitrophenol per minute from *p*NP-β-D-glucopyranoside (5 mM) in sodium acetate buffer (100 mM) pH 5.0 and 40°C, monitored at 410 nm.

3. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	Relative Hydrolysis Rate
Laminarin (<i>Laminaria digitata</i>)	100
Barley β-Glucan	< 0.0001
CM-Cellulose 4M	< 0.0001
CM-Curdlan (2.5 mg/mL)	< 0.0001
Scleroglucan (1 mg/mL)	< 0.0001
Cellobiose	< 0.0001
Maltose	< 0.0001
<i>p</i> -NP-β-D-galactoside	~ 0.036
<i>p</i> -NP-β-D-glucoside	~ 22
<i>p</i> -NP-β-D-mannoside	< 0.0001
<i>p</i> -NP-β-D-xyloside	~ 3.6

Unless stated in the table above, action on disaccharide and polysaccharide substrates was determined at a final substrate concentration of 2 mg/mL and 10 mg/mL, respectively, in sodium acetate buffer (100 mM), pH 5.0 at 40°C. Action on *p*-NP-substrates was determined at a final substrate concentration of 5 mM in sodium acetate buffer (100 mM), pH 5.0 at 40°C.



4. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 4.0 - 6.0 and 40 - 50°C.

pH Optima: 5.0 - 5.5

pH Stability: 5.0 - 9.0 (> 75% control activity after 24 hours at 4°C)

Temperature Optima: 50°C (10 min. reaction)

Temperature Stability: up to 40°C

5. STORAGE AND USE 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 sodium acetate buffer (20 mM), pH 5.0 containing 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**