



CHITINASE from *Clostridium thermocellum* (Lot 141201a)

Recombinant

E-CHITN

03/19

(EC 3.2.1.14) chitodextrinase; 1,4- β -poly-N-acetylglucosaminidase

CAZy Family: GH18

CAS: 9001-06-3

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 53,000)
- One major band on isoelectric focusing (pI ~ 5.01)

2. SPECIFIC ACTIVITY:

0.3 U/mg protein (on *p*-nitrophenyl- β -triacetylchitotriose) at pH 6.2 and 40°C

One Unit of chitinase activity is defined as the amount of enzyme required to release one μ mole of *p*-nitrophenol per minute from *p*-nitrophenyl- β -triacetylchitotriose (2.5 mM) in MES buffer (100 mM), pH 6.2 at 40°C.

3. SPECIFICITY:

Random hydrolysis of N-acetyl-beta-D-glucosaminide (1-4)-beta-linkages in chitin and chitodextrins

4. RELATIVE RATES OF HYDROLYSIS OF SUBSTRATES:

Substrate	%
<i>p</i> -Nitrophenyl N,N',N''-triacetyl- β -chitotriose	100
<i>p</i> -Nitrophenyl-N,N'-diacetyl- β -chitobioside	42
Colloidal chitin (+ hexosaminidase)	32
Colloidal chitin	11

Action on *p*NP-substrates and polysaccharides or oligosaccharides was determined at a final substrate concentration of 2.5 mM and 5 mg/mL, respectively, in MES buffer (100 mM), pH 6.2 at 40°C.

5. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 5.5-6.5 and up to 40°C

- pH Optima: 6.2
pH Stability: 5.5-8.0 (> 75% control activity after 24 h at 4°C)
Temperature Optima: 40°C (10 min reaction)
Temperature Stability: 30°C (> 75% control activity after 15 min incubation at temperature)

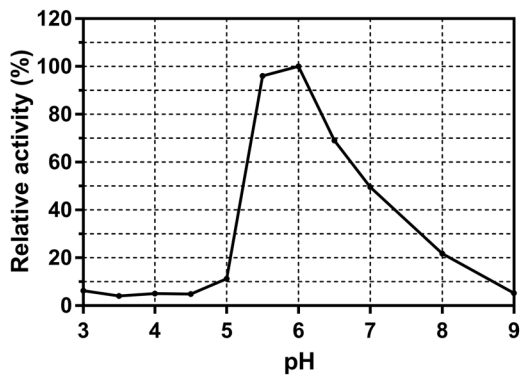
6. STORAGE CONDITIONS:

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 MES buffer (100 mM), pH 6.2.

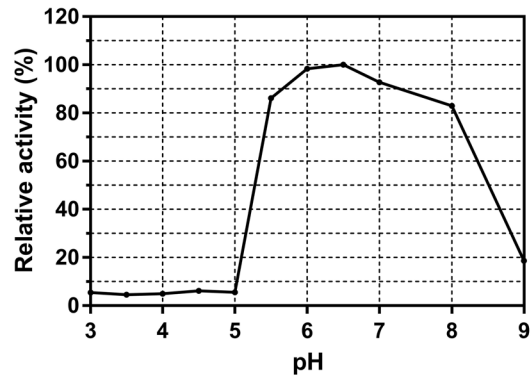
Swirl to mix the enzyme immediately prior to use.

7. EXPERIMENTAL DATA:

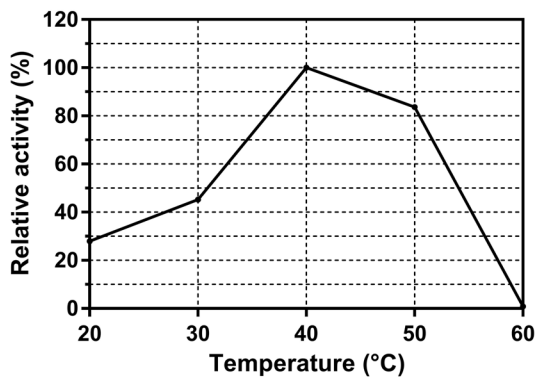
pH Optima



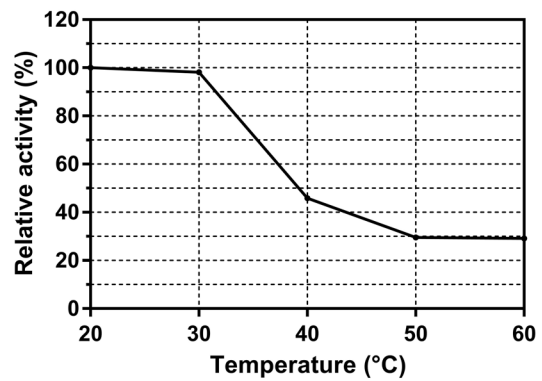
pH Stability



Thermal Optima



Thermal Stability



8. REFERENCES:

Zverlov, V.V., Fuchs, K. P. & Schwarz, W. H. (2002). Chi18A, the endochitinase in the cellulosome of the thermophilic, cellulolytic bacterium *Clostridium thermocellum*. Applied and Environmental Microbiology, 68(6), 3176-9.