



GLUCURONOYL ESTERASE from *Ruminococcus flavefaciens* (Lot 190501a)

Recombinant

E-GERF

11/19

(EC 3.1.1.11) glucuronoyl esterase, 4-O-methyl-glucuronoyl methylesterase
CAZy Family: CE15
CAS: 9016-18-6

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 47,000)
- One major band on isoelectric focusing (pI ~ 5.4)

2. SPECIFIC ACTIVITY:

27 U/mg protein (on pNP-GEUX3) at pH 6.5 and 40°C

One Unit of glucuronoyl esterase activity is defined as the amount of enzyme required to release one μ mole of *p*-nitrophenol (pNP) per minute from *p*-nitrophenyl-2²-(methyl 4-O-methyl- α -D-glucopyranosyluronate)- β -D-xylobioside (5 mM) in sodium phosphate buffer (100 mM), pH 6.5 at 40°C. Analysis was carried out using the Glucuronoyl Esterase Assay kit, **K-GEUX3**.

3. SPECIFICITY:

Glucuronoyl esterase is believed to disconnect hemicellulose from lignin through the hydrolysis of the ester bond between 4-O-methyl-D-glucuronic acid residues of glucuronoxylans and aromatic alcohols of lignin.

4. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 6.0-8.0 and up to 50°C

pH Optima:	7.0
pH Stability:	4.0-8.0 (> 75% control activity after 24 h at 4°C)
Temperature Optima:	40°C (10 min reaction)
Temperature Stability:	up to 50°C (> 75% control activity after 15 min incubation at temperature)

5. 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 phosphate buffer (100 mM), pH 6.5 containing 1 mg/mL BSA. **Swirl to mix the enzyme immediately prior to use.**

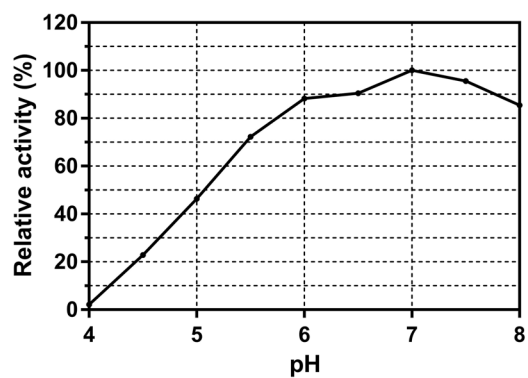
6. REFERENCES:

Aurilia, V., Martin, J. C., McCrae, S. I., Scott, K. P., Rincon, M. T. & Flint, H. J. (2000). Three multidomain esterases from the cellulolytic rumen anaerobe *Ruminococcus flavefaciens* 17 that carry divergent dockerin sequences. *Microbiology*, 146(6), 1391-1397

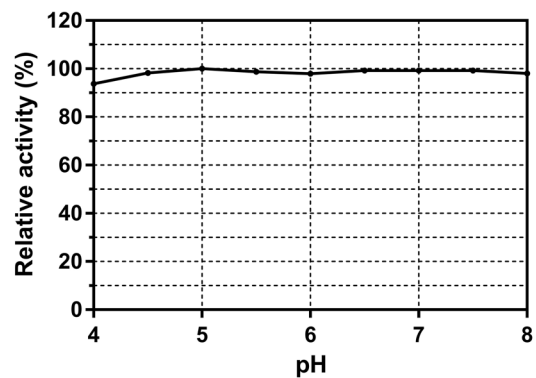
Monrad, R. N., Eklöf, J., Krogh, K. B. R. M. & Biely, P. (2018). Glucuronoyl esterases: diversity, properties and biotechnological potential. A review. *Critical Reviews in Biotechnology*, 38(7), 1121-1136.

7. EXPERIMENTAL DATA:

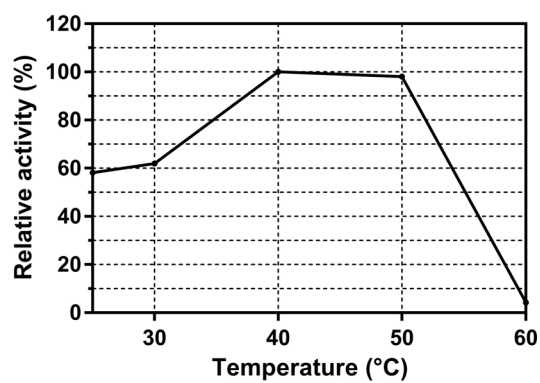
pH Optima



pH Stability



Thermal Optima



Thermal Stability

