

DESCRIPTION

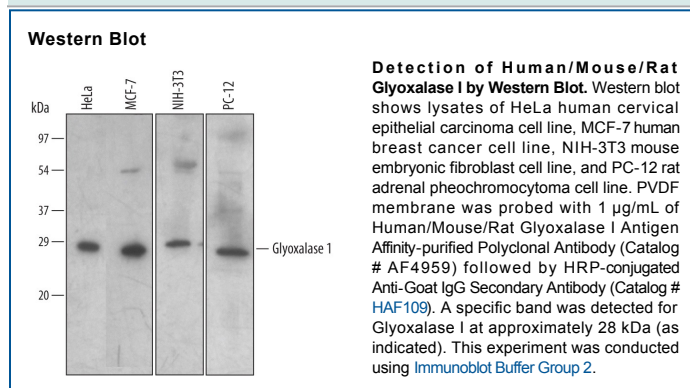
Species Reactivity	Human/Mouse/Rat
Specificity	Detects endogenous human, mouse and rat Glyoxalase I in Western blots.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human Glyoxalase I Ala2-Met184 Accession # Q04760
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the [Technical Information](#) section on our website.

	Recommended Concentration	Sample
Western Blot	1 µg/mL	See Below

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

BACKGROUND

Glyoxalase I (also lactoylglutathione lyase, methylglyoxalase, and glx I) is a 21 kDa member of the Glyoxalase I family. The enzyme is an isomerase that catalyzes the formation of S-D-lactoylglutathione from the hemimercaptal adduct that forms spontaneously between methylglyoxal and reduced GSH (1-4). The monomeric subunit for human Glyoxalase I is 184 amino acids (aa) in length. In the mature protein, the methionine at the N-terminus is removed. Human Glyoxalase I exists in three separable isoforms as homo- and hetero-dimers of two allelic subunit variants, which differ in charge (1). The isoforms are formed when residue 19 is changed from cysteine to tyrosine and residue 111 is changed from glutamine to alanine. Each subunit binds one Zn²⁺ atom (1, 3-4). The protein is made up of multiple beta strands and alpha helical regions. Human Glyoxalase I shares 91% and 90% aa sequence identity with rat and mouse Glyoxalase I, respectively. The enzyme is ubiquitously expressed and is also present in many tumor cell lines, in which its concentration is often upregulated (1). The biological role of the enzyme remains unclear, but the glyoxalase system detoxifies the precursors of advanced glycation end products, which take part in the pathogenesis of vascular, diabetic, and uremic complications (5).

References:

1. Ridderstrom, M. & B. Mannervik (1996) *Biochem. J.* **314**:463.
2. Marmstal, E. & B. Mannervik (1981) *FEBS Lett.* **131**:301.
3. Kim, N-S. *et al.* (1993) *J. Biol. Chem.* **268**:11217.
4. Ranganathan, S. *et al.* (1993) *J. Biol. Chem.* **268**:5661.
5. Kalousova, M. *et al.* (2007) *Ann. N. Y. Acad. Sci.* **1126**:268.