

## Native Guinea pig Transglutaminase

Cat. No. NATE-0715

Lot. No. (See product label)

### Introduction

**Description** Transglutaminase from guinea pig liver consists of a single polypeptide chain of 691 amino acid residues. It has six potential glycosylation sites (Asn-X-Ser or Asn-X-Thr), but it is not glycosylated. The molecular mass is approximately 76.6 kDa. It is calcium dependent and has several calcium binding sites. The enzyme is inhibited by iodoacetamide and N-ethylmaleimide in the presence of calcium. It catalyzes the incorporation of small molecular weight amines into  $\gamma$ -glutamine sites of proteins. In the absence of small molecular weight amines, it catalyzes the cross linking of proteins that results in the formation of  $\gamma$ -glutamyl- $\epsilon$ -lysine side chain peptides. Liver transglutaminase is a nonzymogenic enzyme.

**Applications** This product from Creative Enzymes has been used to demonstrate that tissue transglutaminase (tTG) selectively deamidates gluten peptides, which results in strongly enhanced T cell-stimulatory activity. It has also been used to assess immune responses to A-gliadin peptides. Furthermore, it has been used to demonstrate that tTG selectively modifies gliadin peptides that are recognized by gut-derived T cells in celiac disease. Transglutaminase has been used in a study to improve quantifiable assays to fully characterize the role of transglutaminase in diseases such as Huntington's disease and Alzheimer's disease. Transglutaminase has also been used in a study to develop a nonradioactive dot blot assay for transglutaminase activity.

**Synonyms** transglutaminase; EC 2.3.2.13; 80146-85-6; transglutaminase; Factor XIIIa; fibrinolygase; fibrin stabilizing factor; glutaminylpeptide  $\gamma$ -glutamyltransferase; polyamine transglutaminase; tissue transglutaminase; R-glutaminyl-peptide:amine  $\gamma$ -glutamyl transferase; protein-glutamine  $\gamma$ -glutamyltransferase

### Product Information

<b>Species</b>	Guinea pig
<b>Source</b>	Guinea pig liver
<b>Form</b>	Lyophilized powder containing Tris and dithioerythritol
<b>EC Number</b>	EC 2.3.2.13
<b>CAS No.</b>	80146-85-6
<b>Activity</b>	> 1.5 units/mg protein
<b>Buffer</b>	H <sub>2</sub> O: soluble 1.0 mg/mL, clear
<b>Unit Definition</b>	One unit will catalyze the formation of 1.0 $\mu$ mole of hydroxamate per min from N $\alpha$ -Z-Gln-Gly and hydroxylamine at pH 6.0 at 37°C. (L-Glutamic acid $\gamma$ -monohydroxamate is the standard.)

### Storage and Shipping Information

**Storage** -20°C