

gamma-Glutamyltransferase Reference Standard

Cat. No. GGT1-11H **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Each sample is in lyophilised form and equivalent to about 1 mL of a solution of a partially pig kidney gamma-glutamyltransferase. The preparation has been stabilised by incorporation in a matrix consisting of bovine serum albumin at a mass concentration of 60 g/L. No contamination, as assessed by measurements of their catalytic activity, has been detected for the following enzymes: aspartate and alanine aminotransferases, lactate dehydrogenase, leucine arylaminase and alkaline phosphatase. The material is kept under nitrogen gas in sealed glass ampoules. The mass of lyophilised material contained in an ampoule is about 0.06 g with a residual water mass fraction of the sample of below 0.001.

Species

Human

Description

The enzyme encoded by this gene catalyzes the transfer of the glutamyl moiety of glutathione to a variety of amino acids and dipeptide acceptors. The enzyme is composed of a heavy chain and a light chain, which are derived from a single precursor protein, and is present in tissues involved in absorption and secretion. This enzyme is a member of the gamma-glutamyltransferase protein family, of which many members have not yet been fully characterized and some of which may represent pseudogenes. This gene is classified as type I gamma-glutamyltransferase. Multiple alternatively spliced variants, encoding the same protein, have been identified.

Usage

The material is intended to provide, when reconstituted, a solution with a known catalytic concentration of human GGT that can be used for intra-laboratory quality control of the measurement procedure and to verify comparability of results from

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laboratories using this measurement procedure. The certified reference material can also be used for evaluation of in vitro test systems for GGT measurements by method comparison with the 37 °C IFCC reference measurement procedure. The material can also be used for the calibration of lower order procedures for measuring GGT activities provided they have the same or similar analytical specificities as the reference measurement procedure used for the certification. Commutability of the results from the undiluted material to dilutions has to be checked thoroughly before using the material at several concentration levels for calibration. Reconstitution of the material

1. Take the ampoule out of the freezer and allow reaching room temperature.
2. Tap the vertically positioned gently to ensure that the lyophilised material is at the bottom of the ampoule.
3. Score the ampoule at the constriction with a sharp file and open, by applying a red-hot glass rod to the score for about 1 second, while holding the ampoule almost horizontally to prevent glass from entering the ampoule.
4. Weigh the ampoule with its contents to the nearest 0.1 mg.
5. Reconstitution by slow addition to the sides of the ampoule (1.00±0.01) mL distilled water (20-22 °C) with calibrated volumetric equipment. Note the temperature.
6. Weigh the ampoule after adding the water.
7. Seal the ampoule with an inert plastic film, invert several times and mix contents by gently swirling. Allow to stand at room temperature for 20 min. Swirl ampoule again and let stand for 10 min. Total reconstitution time is approximately 30 min.
8. Calculate the volume of water at 20 °C from the mass of the volume taking into account the temperature-dependent density.
9. The catalytic concentration of Gamma-Glutamyltransferase must be measured within 4 hours following reconstitution.

Quality Control Test

Catalytic concentration in reconstituted material as determined by the IFCC method at 37 °C described in Clinical Chemistry and Laboratory Medicine 40:734-738.

Notes

Avoid swallowing as well as prolonged and repeated contact with skin. Do not discharge the waste into the drain.

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Storage	Unopened ampoules should be stored at -20 °C. However, the European Commission cannot be held responsible for changes that happen during storage of the material at the customer's premises, especially of opened samples.
Concentration	Catalytic concentration in reconstituted material: 114.1 U/L; 1.90 Ukat/L
GENE INFORMATION	
Gene Name	GGT1 gamma-glutamyltransferase 1 [Homo sapiens]
Official Symbol	GGT1
Synonyms	GGT1; gamma-glutamyltransferase 1; GGT; gamma-glutamyltranspeptidase 1; CD224; D22S672; D22S732; glutamyl transpeptidase; glutathione hydrolase 1; gamma-glutamyl transpeptidase; GTG; GGT 1; MGC96892; MGC96904; MGC96963;
Gene ID	2678
mRNA Refseq	NM_001032364
Protein Refseq	NP_001027536
MIM	612346
UniProt ID	P19440
Chromosome Location	22q11.23
Pathway	Arachidonic acid metabolism, organism-specific biosystem; Arachidonic acid metabolism, conserved biosystem; Biological oxidations, organism-specific

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biosystem; Cyanoamino acid metabolism, organism-specific biosystem; Cyanoamino acid metabolism, conserved biosystem; Eicosanoid Synthesis, organism-specific biosystem; Glutathione conjugation, organism-specific biosystem;

Function

gamma-glutamyltransferase activity; gamma-glutamyltransferase activity; hydrolase activity; protein binding; transferase activity, transferring acyl groups;

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