ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Glutathione Transferase-Alpha (GST-α or GST A1-1) Protein

Cat. GSTA15-R-25 Recombinant purified Human GST-alpha Size: 25 ug 100 ug

GST's are responsible for the metabolism of a broad range of xenobiotics and carcinogens. The enzyme catalyzes the reaction of glutathione with a wide variety of organic compounds to form thioethers, a reaction that is sometimes a first step in a detoxification process leading to mercapturic acid formation. GSTs play an important role defense against electrophilic chemicals generated by cellular oxidative reactions catalyzed by cytochrome P450 and other oxidases. GSTs are believed to defend against the highly reactive electrophiles that are formed as a result of cellular oxidative processes. Based on amino acid sequence similarities and antibody cross-reactivities, the mammalian cytosolic GSTs are divided into the following classes: alpha, mu, kappa, theta, pi, zeta, omega and sigma. GSTs exists as homodimers of ~25 kDa. GST A1-1 is mainly found in kidney, intestine, lung, and liver. GST M1-1 is restricted to liver and few other tissues. GST P1-1 has a widespread distribution in most tumor cells and tissues but it is absent in liver. The GST M1-1 is the type b allelic variant and corresponds to human GST Y.

GSTA1: The alpha gene cluster consists of 5 genes GSTA1-GSTA5; the GSTA1 contains 222aa (chr 6p12), widely expressed in human tissues of liver, kidney, testis, adrenal and pancrease. GST alpha 1-1 concentration as a marker for hepatocellular impairment, GSTA1 concentration in blood is a more specific marker than AST or ALT, and has a shorter half-life than ALT The GSTA1 shows enzyme activity towards CDNR; NBD-Cl; **Δ5** AD, PGE_2 AND PGF2a synthase.

Source of Antigen

Human GST-alpha/GST A1-1 was expressed in E. coli and purified (>95%). Under native conditions, GST-alpha is homodimeric protein of ~50 kda and under reducing conditions ~25 kda. It is supplied in 25 ug or 100 ug/vial in a buffer containing 50 mM Tris, pH 7.5, 50 mM NaCl; 1 mM DTT, 1 mM EDTA, 50% glycerol. Concentration is specified on the vial.

Specific activity: Approx. 50 units/mg. One unit will catalyze the conjugation of 1.0 micromole of 1-chloro-2-4-dinitrobenzene and reduced glutathione per min at pH 6.5 at 25oC.

Storage

Store at –20oC.

Stability: 6-12 months at –20oC or below.

Shipping: -20oC for solutions. Not shipped outside the USA.

Recommended Usage

Purified GST-alpha protein can be used for biological activity determination, ELISA, and for standards or for positive control for Western. **Protein concentration must be optimized for each application under defined experimental conditions.**

General References: Knapen MFCM (200) Lancet, 355, 1463-1464; Morel F et al (2002) Pharmacogenetics 12, 277-286; Suzuki T et al (1993) Genomics 18, 680-686

This product is for in vitro research use only.

Related material available from ADI

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