



LD Biopharma, Inc.
9924 Mesa Rim Road
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CD224 Protein
Catalog Number: hRP-1010
Manufacturer: LD Biopharma, Inc.

Introduction

The enzyme gamma-glutamyltransferase (GGT) has a substantial role in the metabolism of glutathione (γ -glutamyl-cysteinyl-glycine; GSH). For maintaining adequate levels of intracellular GSH, GGT catalyses the degradation of extracellular GSH, thus providing component amino acids that are then available for further intracellular GSH production. Within the cell GSH functions as a major antioxidant, neutralising reactive oxygen compounds and free radicals. The enzyme encoded by human gamma-glutamyltranspeptidase-1 (GGT1; CD224) 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. GGT expression is found predominantly on the luminal surface of secretory epithelial cells, especially of the hepato-biliary tract, the pancreas and the kidneys. Abnormal GGT expression is found in several human tumours, including breast cancer, ovarian cancer and cervical cancer.

Full-length mature human CD224 cDNA (28-569aa, derived from BC025927) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal and expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: CD224 (GGT1; D22S672; GTG; D22S732)
Accession Number: NP_038347
Species: Human
Size: 40 μ g / Vial
Composition: 0.4 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Glycerol.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.



LD Biopharma, Inc.
9924 Mesa Rim Road
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

Key References

Kozakova, M., et al., *Fatty liver index, gamma-glutamyltransferase, and early carotid plaques*. *Hepatology* 55 (5), 1406-1415 (2012).

Seebacher, V., et al., *Prognostic significance of gamma-glutamyltransferase in patients with endometrial cancer: a multi-centre trial*. *Br. J. Cancer* 106 (9), 1551-1555 (2012).

Breitling, L.P., et al., *Liver enzymes: interaction analysis of smoking with alcohol consumption or BMI, comparing AST and ALT to gamma-GT*. *PLoS ONE* 6 (11), E27951 (2011).

Tate, S.S. et al., *Human kidney gamma-glutamyl transpeptidase. Catalytic properties, subunit structure, and localization of the gamma-glutamyl*

Applications

1. May be used for in vitro human glutathione metabolism mediated apoptosis regulation study with this protein as coating or matrix protein.
2. May be used for protein-protein interaction assay development.
3. Potential biomarker protein for various cancer, such as endometrial cancer,
4. As antigen for specific antibody production.

Quality Control

1. Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHGNLYFQGGESASKEPDNHVYTRAAVAADAKQCSKIGRDALRDGGS
AVDAAIAALLCVGLMNAHSMGIGGGLFLTIYNSTTRKAEVINAREVAPRLAFATMFNSSEQSQK
GGLSVAVPGEIRGYELAHQRHGRLPWARLFQPSIQLARQGFVPGKGLAAALENKRTVIEQQPVL
CEVFCRDRKVLREGERLTLPQLADTYETLAIEGAQAFYNGSLTAQIVKDIQAAGGIVTAEDLNN
YRAELIEHPLNISLGDVVLYMPSAPLSGPVLALILNILKGYNFSRESVESPEQKGLTYHRIVEA
FRFAYAKRLLGDPKFVDVTEVVRNMTSEFFAAQLRAQISDDTTHPISYYKPEFYTPDDGGTAH
LSVVAEDGSAVSATSTINLYFGSKVRSVSGILFNEMDDFSSPSITNEFGVPPSPANFIQPGK
QPLSSMCPTIMVGQDQVRMVVGAAGGTQITTATALAIYINLWFGYDVKRAVEEPRLHNQLLPN
VTTVERNIDQAVTAALETRHHHTQIASTFIAVVQAIVRTAGGWAAASDSRKGGEPAKY