

PRODUCT INFORMATION



GLS1 (human, recombinant)

Item No. 33737

Overview and Properties

Synonyms: GAC, GAM, GLS, K-glutaminase, Glutaminase Kidney Isoform Mitochondrial, Glutaminase Transcript Variant 1, KGA, L-glutamine Amidohydrolase
Source: Active recombinant human N-terminal His-tagged GLS1 expressed in *E. coli*
Amino Acids: 17-699
Uniprot No.: O94925
Molecular Weight: 73 kDa
Storage: -80°C (as supplied)
Stability: ≥6 months
Purity: ≥80% estimated by SDS-PAGE
Supplied in: 40 mM Tris-HCl, pH 8.0, with 110 mM sodium chloride, 2.2 mM potassium chloride, 0.04% Tween 20, and 20% glycerol

Protein

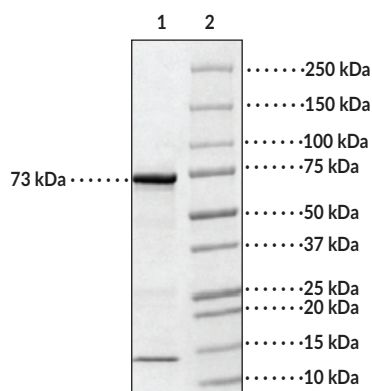
Concentration: *batch specific* mg/ml

Activity: *batch specific* U/ml

Specific Activity: *batch specific* U/mg

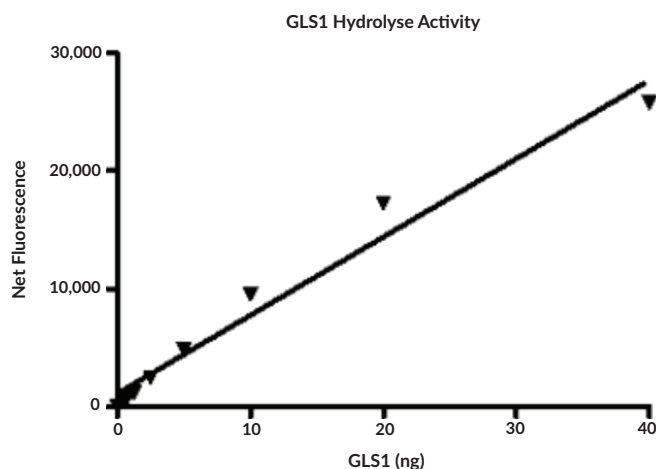
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: GLS1 (2 µg)
Lane 2: MW Markers

SDS-PAGE Analysis of GLS1.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Glutaminase 1 (GLS1) is a mitochondrial enzyme that catalyzes the catabolism of glutamine to glutamate and ammonia.^{1,2} Alternative transcription of *GLS*, the gene encoding GLS1, produces two isozymes: kidney (K-type) glutaminase (KGA) and glutaminase C (GAC), which are expressed in kidney, brain, intestine, and fetal liver tissues.¹ *GLS* expression is increased in multiple cancer types, including colorectal, prostate, and breast, and is associated with poor prognosis in ovarian, breast, gastric, and head and neck cancers.³ GLS1 is also essential to T helper 17 (Th17) cell differentiation, and pharmacologic inhibition of GLS1 ameliorates disease symptoms in mouse models of lupus, experimental autoimmune encephalomyelitis, and psoriasis.^{4,5} Cayman's GLS1 (human, recombinant) protein can be used for enzyme activity assays.

References

1. Curthoys, N.P. and Watford, M. Regulation of glutaminase activity and glutamine metabolism. *Annu. Rev. Nutr.* **15**, 133-159 (1995).
2. Matés, J.M., Segura, J.A., Martín-Rufián, M., *et al.* Glutaminase isoenzymes as key regulators in metabolic and oxidative stress against cancer. *Curr. Mol. Med.* **13**(4), 514-534 (2013).
3. Yu, W., Yang, X., Zhang, Q., *et al.* Targeting GLS1 to cancer therapy through glutamine metabolism. *Clin. Transl. Oncol.* **23**(11), 2253-2268 (2021).
4. Kono, M., Yoshida, N., Maeda, K., *et al.* Glutaminase 1 inhibition reduces glycolysis and ameliorates lupus-like disease in MRL/lpr mice and experimental autoimmune encephalomyelitis. *Arthritis Rheumatol.* **71**(11), 1869-1878 (2019).
5. Xia, X., Cao, G., Sun, G., *et al.* GLS1-mediated glutaminolysis unbridled by MALT1 protease promotes psoriasis pathogenesis. *J. Clin. Invest.* **130**(10), 5180-5196 (2020).

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