

KGA (T-16): sc-26646

BACKGROUND

Glutamine is an important molecule involved in several cellular functions, including nitrogen and carbon transport, hepatic urea synthesis, renal ammoniogenesis and gluconeogenesis. Glutamine is catabolized by either the liver-type (LGA) or kidney-type (KGA) glutaminase. KGA is a mitochondrial-specific protein whose expression in kidney is increased during metabolic acidosis. This process is mediated by an 8-base AU sequence in KGA that functions as a pH-response element. The human KGA gene maps to chromosome 2 and produces three isoforms, designated KGA, GAC and GAM, by alternative splicing. KGA is synthesized as a cytosolic protein that is transported to the mitochondria as an intermediate protein and is further cleaved into the KGA isoform and the GAC isoform. The processing of the GAM isoform is unclear. The KGA isoform is abundant in brain and kidney, while the GAC isoform is principally expressed in cardiac muscle and pancreas. The GAM isoform is solely expressed in cardiac and skeletal muscle.

REFERENCES

1. Curthoys, N.P. and Watford, M. 1995. Regulation of glutaminase activity and glutamine metabolism. *Annu. Rev. Nutr.* 15: 133-159.
2. Srinivasan, M., Kalousek, F. and Curthoys, N.P. 1995. *In vitro* characterization of the mitochondrial processing and the potential function of the 68 kDa subunit of renal glutaminase. *J. Biol. Chem.* 270: 1185-1190.
3. Srinivasan, M., Kalousek, F., Farrell, L. and Curthoys, N.P. 1995. Role of the N-terminal 118 amino acids in the processing of the rat renal mitochondrial glutaminase precursor. *J. Biol. Chem.* 270: 1191-1197.
4. Elgadi, K.M., Meguid, R.A., Qian, M., Souba, W.W. and Abcouwer, S.F. 1999. Cloning and analysis of unique human glutaminase isoforms generated by tissue-specific alternative splicing. *Physiol. Genomics* 1: 51-62.
5. Aledo, J.C., Gomez-Fabre, P.M., Olalla, L. and Marquez, J. 2000. Identification of two human glutaminase loci and tissue-specific expression of the two related genes. *Mamm. Genome* 11: 1107-1110.

CHROMOSOMAL LOCATION

Genetic locus: GLS (human) mapping to 2q32.2; Gls (mouse) mapping to 10 D3.

SOURCE

KGA (T-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KGA of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26646 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

KGA (T-16) is recommended for detection of KGA of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

KGA (T-16) is also recommended for detection of KGA in additional species, including equine, canine and porcine.

Suitable for use as control antibody for KGA siRNA (h): sc-105592, KGA shRNA Plasmid (h): sc-105592-SH and KGA shRNA (h) Lentiviral Particles: sc-105592-V.

Molecular Weight of KGA: 73 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



KGA (T-16): sc-26646. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and membrane staining of glandular cells.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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Try **KGA (IJ-2): sc-100533**, our highly recommended monoclonal alternative to KGA (T-16).