SANTA CRUZ BIOTECHNOLOGY, INC.

GUF1 (B-7): sc-514604

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GUF1 (GUF1 GTPase), also known as EF-4 (elongation factor 4 homolog), translation factor GUF1 (mitochondrial), ribosomal back-translocase or GTPase of unknown function 1, is a 669 amino acid protein belonging to the GTP-binding elongation factor family and the LepA subfamily. Localizing to the mitochondrion inner membrane, GUF1 is thought to promote mitochondrial protein synthesis and binds to mitochondrial ribosomes in a GTP-dependent manner. GUF1 is suggested to catalyze a one-codon backward translocation of tRNAs on improperly translocated ribosomes, thereby acting as a fidelity factor of the translation reaction. GUF1 is encoded by a gene located on human chromosome 4, which encodes nearly 6% of the human genome and has the largest gene desert (regions of the genome with no protein encoding genes) of all of the human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Kiser, G.L. and Weinert, T.A. 1995. GUF1, a gene encoding a novel evolutionarily conserved GTPase in budding yeast. Yeast 11: 1311-1316.
2. Hillier, L.W., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. Nature 434: 724-731.
3. Yamanaka, R., et al. 2006. Identification of expressed genes characterizing long-term survival in malignant glioma patients. Oncogene 25: 5994-6002.
4. Stack, E.C., et al. 2007. Neuroprotective effects of synaptic modulation in Huntington's disease R6/2 mice. J. Neurosci. 27: 12908-12915.
5. Versteegh, F.G., et al. 2007. EvC Working Party. Growth hormone analysis and treatment in Ellis-van Creveld syndrome. Am. J. Med. Genet. A 143A: 2113-2121.

CHROMOSOMAL LOCATION

Genetic locus: GUF1 (human) mapping to 4p12; Guf1 (mouse) mapping to 5 C3.1.

SOURCE

GUF1 (B-7) is a mouse monoclonal antibody raised against amino acids 441-642 mapping near the C-terminus of GUF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GUF1 (B-7) is available conjugated to agarose (sc-514604 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514604 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514604 PE), fluorescein (sc-514604 FITC), Alexa Fluor® 488 (sc-514604 AF488), Alexa Fluor® 546 (sc-514604 AF546), Alexa Fluor® 594 (sc-514604 AF594) or Alexa Fluor® 647 (sc-514604 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514604 AF680) or Alexa Fluor® 790 (sc-514604 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GUF1 (B-7) is recommended for detection of GUF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GUF1 siRNA (h): sc-89135, GUF1 siRNA (m): sc-145840, GUF1 shRNA Plasmid (h): sc-89135-SH, GUF1 shRNA Plasmid (m): sc-145840-SH, GUF1 shRNA (h) Lentiviral Particles: sc-89135-V and GUF1 shRNA (m) Lentiviral Particles: sc-145840-V.

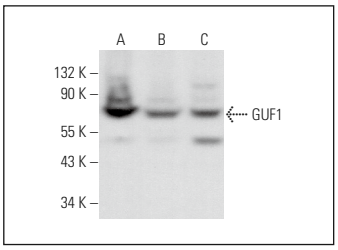
Molecular Weight of GUF1: 74 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A549 cell lysate: sc-2413 or Hep G2 cell lysate: sc-2227.

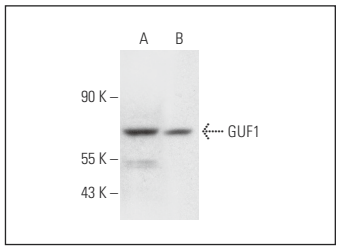
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GUF1 (B-7): sc-514604. Western blot analysis of GUF1 expression in SJRH30 (**A**), A549 (**B**) and NIH/3T3 (**C**) whole cell lysates.



GUF1 (B-7): sc-514604. Western blot analysis of GUF1 expression in HeLa (**A**) and Hep G2 (**B**) whole cell lysates.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.