

HPRT (B-11): sc-393901

BACKGROUND

HPRT (hypoxanthine phosphoribosyltransferase 1), also known as HGPRT or HPRT1, is a 218 amino acid cytoplasmic protein that belongs to the purine/pyrimidine phosphoribosyltransferase family. Involved in purine metabolism, HPRT functions as a purine salvage enzyme that catalyzes the conversion of hypoxanthine and guanine to their respective mononucleotides (inosine monophosphate and guanosine monophosphate, respectively). HPRT exists as a homotetramer that can bind two magnesium ions as cofactors. Defects in the gene encoding HPRT are the cause of gout and Lesch-Nyhan syndrome (LNS), both of which are characterized by a partial or complete lack of HPRT enzymatic activity. While a partial loss of HPRT enzymatic activity results in a buildup of uric acid (gout), a total loss of enzymatic activity results in hyper-uricaemia, mental retardation, choreoathetosis and compulsive self-mutilation, all of which are symptoms associated with LNS. The severity of these diseases suggests an essential role for HPRT in purine metabolism.

REFERENCES

1. Stout, J.T. and Caskey, C.T. 1985. HPRT: gene structure, expression, and mutation. *Annu. Rev. Genet.* 19: 127-148.
2. Fujimori, S., et al. 1997. An asymptomatic germline missense base substitution in the hypoxanthine phosphoribosyltransferase (HPRT) gene that reduces the amount of enzyme in humans. *Hum. Genet.* 99: 8-10.
3. Mizunuma, M., et al. 2001. A recurrent large Alu-mediated deletion in the hypoxanthine phosphoribosyltransferase (HPRT1) gene associated with Lesch-Nyhan syndrome. *Hum. Mutat.* 18: 435-443.
4. Koina, E. and Piper, A. 2005. An inactive X specific replication origin associated with a matrix attachment region in the human X linked HPRT gene. *J. Cell. Biochem.* 95: 391-402.
5. Dawson, P.A., et al. 2005. Normal HPRT coding region in a male with gout due to HPRT deficiency. *Mol. Genet. Metab.* 85: 78-80.

CHROMOSOMAL LOCATION

Genetic locus: HPRT1 (human) mapping to Xq26.2; Hprt (mouse) mapping to X A5.

SOURCE

HPRT (B-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 16-39 near the N-terminus of HPRT of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393901 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

HPRT (B-11) is recommended for detection of HPRT 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).

HPRT (B-11) is also recommended for detection of HPRT in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for HPRT siRNA (h): sc-40679, HPRT siRNA (m): sc-40680, HPRT shRNA Plasmid (h): sc-40679-SH, HPRT shRNA Plasmid (m): sc-40680-SH, HPRT shRNA (h) Lentiviral Particles: sc-40679-V and HPRT shRNA (m) Lentiviral Particles: sc-40680-V.

Molecular Weight of HPRT: 23 kDa.

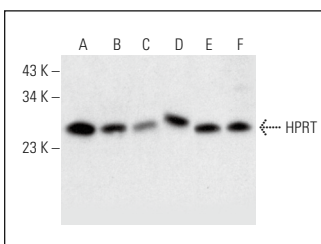
Positive Controls: MIA PaCa-2 cell lysate: sc-2285, A549 cell lysate: sc-2413 or KNRK whole cell lysate: sc-2214.

RECOMMENDED SUPPORT REAGENTS

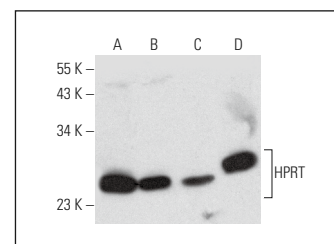
To ensure optimal results, the following support reagents are recommended:

- 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



HPRT (B-11): sc-393901. Western blot analysis of HPRT expression in MIA PaCa-2 (A), A549 (B), Hep G2 (C), KNRK (D), HeLa (E) and A-431 (F) whole cell lysates.



HPRT (B-11): sc-393901. Western blot analysis of HPRT expression in MOLT-4 (A), ACHN (B), Neuro-2A (C) and NRK (D) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Soflaee, M.H., et al. 2022. Purine nucleotide depletion prompts cell migration by stimulating the serine synthesis pathway. *Nat. Commun.* 13: 2698.

RESEARCH USE

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