

HPRT (F-1): sc-376938



The Power to Question

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 hyperuricaemia, 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.

REFERENCE

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.

CHROMOSOMAL LOCATION

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

SOURCE

HPRT (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 167-201 near the C-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.

HPRT (F-1) is available conjugated to agarose (sc-376938 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376938 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376938 PE), fluorescein (sc-376938 FITC), Alexa Fluor® 488 (sc-376938 AF488), Alexa Fluor® 546 (sc-376938 AF546), Alexa Fluor® 594 (sc-376938 AF594) or Alexa Fluor® 647 (sc-376938 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376938 AF680) or Alexa Fluor® 790 (sc-376938 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376938 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

HPRT (F-1) 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), 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).

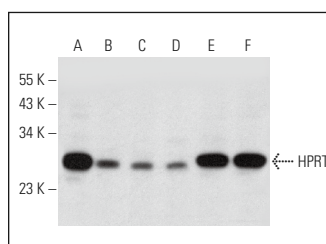
HPRT (F-1) is also recommended for detection of HPRT in additional species, including equine, canine, bovine and porcine.

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.

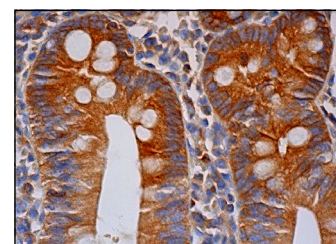
Molecular Weight of HPRT: 23 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, ACHN whole cell lysate: sc-364365 or Neuro-2A whole cell lysate: sc-364185.

DATA



HPRT (F-1): sc-376938. Western blot analysis of HPRT expression in MOLT-4 (A), ACHN (B), Neuro-2A (C), NIH/3T3 (D), RAT2 (E) and NRK (F) whole cell lysates.



HPRT (F-1): sc-376938. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Bugajev, V., et al. 2016. Negative regulatory roles of ORMDL3 in the FcεRI-triggered expression of proinflammatory mediators and chemotactic response in murine mast cells. *Cell. Mol. Life Sci.* 73: 1265-1285.
2. Kim, B., et al. 2019. Targeted lipid nanoemulsions encapsulating epigenetic drugs exhibit selective cytotoxicity on CDH1-/FOXN1+ triple negative breast cancer cells. *Mol. Pharm.* 16: 1813-1826.
3. Tran, D.H., et al. 2021. Mitochondrial NADP⁺ is essential for proline biosynthesis during cell growth. *Nat. Metab.* 3: 571-585.
4. Pringle, E.S., et al. 2022. Thiopurines inhibit coronavirus Spike protein processing and incorporation into progeny virions. *PLoS Pathog.* 18: e1010832.
5. Linnemann, C., et al. 2023. NET formation was reduced via exposure to extremely low-frequency pulsed electromagnetic fields. *Int. J. Mol. Sci.* 24: 14629.

RESEARCH USE

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