

# HPRT (A-10): sc-376559

## 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.

## REFERENCES

1. Stout, J.T., et al. 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., et al. 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.
6. Cossu, A., et al. 2006. HPRTSardinia: a new point mutation causing HPRT deficiency without Lesch-Nyhan disease. *Biochim. Biophys. Acta* 1762: 29-33.

## CHROMOSOMAL LOCATION

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

## SOURCE

HPRT (A-10) is a mouse monoclonal antibody raised against amino acids 1-218 representing full length HPRT of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

HPRT (A-10) 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).

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.

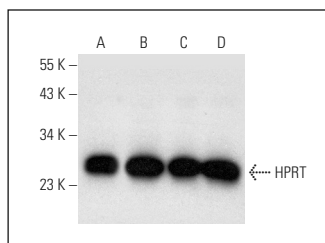
Molecular Weight of HPRT: 23 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

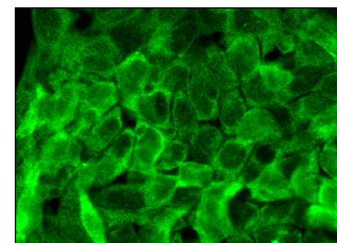
## RECOMMENDED SUPPORT REAGENTS

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 (A-10): sc-376559. Western blot analysis of HPRT expression in Hep G2 (A), HeLa (B), A-431 (C) and MCF7 (D) whole cell lysates.



HPRT (A-10): sc-376559. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Gao, X., et al. 2015. Cadmium and proliferation in human uterine leiomyoma cells: evidence of a role for EGFR/MAPK pathways but not classical estrogen receptor pathways. *Environ. Health Perspect.* 123: 331-336.
2. Yuan, Z., et al. 2022. Epigenetic silencing and tumor suppressor gene of HAND2 by targeting ERK signaling in colorectal cancer. *Cell Commun. Signal.* 20: 111.

## RESEARCH USE

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