SANTA CRUZ BIOTECHNOLOGY, INC.

TPMT (E-8): sc-374154

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Thiopurine S-methyltransferase (TPMT), also designated thiopurine methyltransferase, acts as a catalyst for the S-methylation of thiopurine drugs such as 6-mercaptopurine. TPMT, usually found as a monomer, is inhibited by S-adenosyl-L-homocysteine. It is a cytoplasmic protein belongs to the TPMT subfamily of the larger methyltransferase superfamily of proteins. TPMT activity varies among different ethnic groups, with a large majority of Caucasians having a high TPMT activity. A common genetic polymorphism controls the level of TPMT activity. The level of TPMT activity is associated with the variation in efficacy and toxicity of thiopurine drugs.

REFERENCES

1. Kelleher, D., et al. 2004. Pharmacogenetics of inflammatory bowel disease. Novartis Found. Symp. 263: 41-53.
2. Ford, L., et al. 2004. Whose TPMT activity is it anyway? Ann. Clin. Biochem. 41: 498-500.
3. Khalil, M.N., et al. 2005. Interference free and simplyfied liquid chromatography-based determination of thiopurine S-methyltransferase activity in erythrocytes. J. Chromatogr. B, Analyt. Technol. Biomed. Life Sci. 821: 105-111.
4. Okada, Y., et al. 2005. Genotyping of thiopurine methyltransferase using pyrosequencing. Biol. Pharm. Bull. 28: 677-681.
5. Heckmann, J.M., et al. 2005. Thiopurine methyltransferase (TPMT) heterozygosity and enzyme activity as predictive tests for the development of azathioprine-related adverse events. J. Neurol. Sci. 231: 71-80.
6. Stanulla, M., et al. 2005. Thiopurine methyltransferase (TPMT) genotype and early treatment response to mercaptopurine in childhood acute lymphoblastic leukemia. JAMA 293: 1485-1489.

CHROMOSOMAL LOCATION

Genetic locus: TPMT (human) mapping to 6p22.3.

SOURCE

TPMT (E-8) is a mouse monoclonal antibody raised against amino acids 38-115 mapping within an internal region of TPMT 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.

TPMT (E-8) is available conjugated to agarose (sc-374154 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374154 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374154 PE), fluorescein (sc-374154 FITC), Alexa Fluor® 488 (sc-374154 AF488), Alexa Fluor® 546 (sc-374154 AF546), Alexa Fluor® 594 (sc-374154 AF594) or Alexa Fluor® 647 (sc-374154 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374154 AF680) or Alexa Fluor® 790 (sc-374154 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

TPMT (E-8) is recommended for detection of TPMT of 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 TPMT siRNA (h): sc-61701, TPMT shRNA Plasmid (h): sc-61701-SH and TPMT shRNA (h) Lentiviral Particles: sc-61701-V.

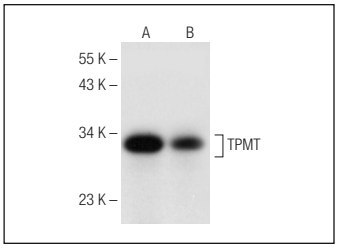
Molecular Weight of TPMT: 32 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HEL 92.1.7 cell lysate: sc-2270 or TF-1 cell lysate: sc-2412.

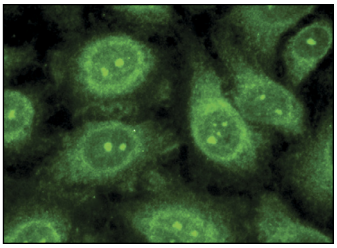
RECOMMENDED SUPPORT REAGENTS

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



TPMT (E-8): sc-374154. Western blot analysis of TPMT expression in K-562 (**A**) and HEL 92.1.7 (**B**) whole cell lysates.



TPMT (E-8): sc-374154. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Zudeh, G., et al. 2023. PACSIN2 as a modulator of autophagy and mercaptopurine cytotoxicity: mechanisms in lymphoid and intestinal cells. Life Sci. Alliance 6: e202201610.

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.