

INDOL1 (H-110): sc-292211

BACKGROUND

Tryptophan is an essential amino acid that is necessary for protein synthesis, serotonin and melatonin biosynthesis and energy production; energy being a product of the catabolism of tryptophan through the kynurenine pathway. The kynurenine pathway has many downstream metabolites which may be a part of physiological or patho-physiological processes. INDOL1 (indoleamine 2,3-dioxygenase-like protein 1) is an enzyme that catalyzes the first step of the kynurenine pathway of tryptophan metabolism. INDOL1 is also known as IDO2 (indoleamine 2,3-dioxygenase 2) and is a 407 amino acid protein that is expressed in various tissues, including liver, small intestine, spleen, placenta, thymus, lung, brain, kidney, colon and dendritic cells. INDOL1 is selectively inhibited by D-1MT (1-methyl- δ -tryptophan), which also inhibits IDO (indoleamine 2,3-dioxygenase) and is significant because IDO expression causes suppression of T cell responses to tumors in dendritic cells. The inhibition of INDOL1 by D-1MT suggests a common function in immunomodulation. In the human INDOL1 gene, two single nucleotide polymorphisms have been detected which abolish the enzymatic function of INDOL1.

REFERENCES

1. Fernstrom, J.D., et al. 1971. Brain serotonin content: physiological dependence on plasma tryptophan levels. *Science* 173: 149-152.
2. Fox, C.J., et al. 2005. Fuel feeds function: energy metabolism and the T-cell response. *Nat. Rev. Immunol.* 5: 844-852.
3. Metz, R., et al. 2007. Novel tryptophan catabolic enzyme IDO2 is the preferred biochemical target of the antitumor indoleamine 2,3-dioxygenase inhibitory compound D-1-methyl-tryptophan. *Cancer Res.* 67: 7082-7087.
4. Murray, M.F. 2007. The human indoleamine 2,3-dioxygenase gene and related human genes. *Curr. Drug Metab.* 8: 197-200.
5. Ball, H.J., et al. 2007. Characterization of an indoleamine 2,3-dioxygenase-like protein found in humans and mice. *Gene* 396: 203-213.
6. Löb, S., et al. 2008. Is IDO a key enzyme bridging the gap between tumor escape and tolerance induction? *Langenbecks Arch. Surg.* 393: 995-1003.
7. Prendergast, G.C. 2008. Immune escape as a fundamental trait of cancer: focus on IDO. *Oncogene* 27: 3889-3900.
8. Online Mendelian Inheritance in Man, OMIM[™]. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 612129. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
9. Ball, H.J., et al. 2009. Indoleamine 2,3-dioxygenase-2; a new enzyme in the kynurenine pathway. *Int. J. Biochem. Cell Biol.* 41: 467-471.

CHROMOSOMAL LOCATION

Genetic locus: IDO2 (human) mapping to 8p11.21; Ido2 (mouse) mapping to 8 A2.

SOURCE

INDOL1 (H-110) is a rabbit polyclonal antibody raised against amino acids 271-380 mapping near the C-terminus of INDOL1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

INDOL1 (H-110) is recommended for detection of INDOL1 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

INDOL1 (H-110) is also recommended for detection of INDOL1 in additional species, including equine, porcine and canine.

Suitable for use as control antibody for INDOL1 siRNA (h): sc-77706, INDOL1 siRNA (m): sc-146235, INDOL1 shRNA Plasmid (h): sc-77706-SH, INDOL1 shRNA Plasmid (m): sc-146235-SH, INDOL1 shRNA (h) Lentiviral Particles: sc-77706-V and INDOL1 shRNA (m) Lentiviral Particles: sc-146235-V.

Molecular Weight of INDOL1: 45 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.



Try **INDOL1 (C-9): sc-374159**, our highly recommended monoclonal alternative to INDOL1 (H-110).