

# INDOL1 (M-110): sc-292212

## 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-d-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. and Wurtman, R.J. 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. and Königsrainer, A. 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

INDOL1 (M-110) is a rabbit polyclonal antibody raised against amino acids 261-370 mapping near the C-terminus of INDOL1 of mouse origin.

## PRODUCT

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

## APPLICATIONS

INDOL1 (M-110) is recommended for detection of INDOL1 of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, 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 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](http://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 (M-110).