

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TDO2 in direct ELISAs.
Source	Monoclonal Mouse IgG _{2B} Clone # 998604
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived human TDO2 Leu18-Phe388 Accession # P48775
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

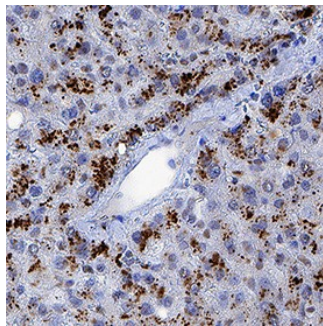
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Immunohistochemistry	5-25 µg/mL	See Below
Intracellular Staining by Flow Cytometry	0.25 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

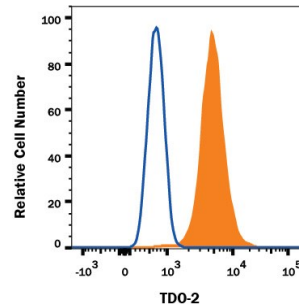
DATA

Immunohistochemistry



TDO2 in Human Liver. TDO2 was detected in immersion fixed paraffin-embedded sections of human liver using Mouse Anti-Human TDO2 Monoclonal Antibody (Catalog # MAB9768) at 5 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm in hepatocytes. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Intracellular Staining by Flow Cytometry



Detection of TDO2 in A431 Human Cell Line by Flow Cytometry. A431 human epidermoid carcinoma cell line was stained with Mouse Anti-Human TDO2 Monoclonal Antibody (Catalog # MAB9768, filled histogram) or isotype control antibody (Catalog # MAB0041, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with saponin. View our protocol for Staining Intracellular Molecules.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Tryptophan 2,3-dioxygenase (TDO2), a heme-containing cytosolic dioxygenase, forms a homo-tetrameric active molecule of approximately 190 kDa composed of 48 kDa monomers (1, 2). Human TDO2 shares 89% aa sequence identity with mouse TDO2. TDO2 is one of three proteins capable of catalyzing the first and rate-limiting step of the L-kynurenine pathway (KP): oxidative cleavage of the essential amino acid L-tryptophan to form N-formyl-kynurenine (3). TDO2 is a cytosolic protein typically localized to the liver and brain, unlike the more ubiquitously expressed indoleamine 2,3-dioxygenase (IDO), yet it is responsible for ~90% of the primary route of catabolism of tryptophan through the KP (3). TDO2 is upregulated in extrahepatic tumors (4-6) and is consequently a target in cancer immunotherapy (7). TDO2 is a therapeutic target in brain disease such as schizophrenia, Alzheimers disease, multiple sclerosis and glioma (8-11) due to its role in the regulation of levels of critical biologically active downstream KP metabolites (3). Polymorphisms in the TDO2 gene have been implicated for a role in behavioural responses and autism (12,13).

References:

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