abcam

ab55305

Anti-Indoleamine 2, 3-dioxygenase antibody [4D2]

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human IDO1. Database link P14902
Clone number	4D2
Purity	Tissue culture supernatant
Light chain type	kappa
Purification notes	Purified from TCS.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-Fr

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information IDO1

Function Catalyzes the first and rate limiting step of the catabolism of the essential amino acid tryptophan along the kynurenine pathway (PubMed:17671174, PubMed:18026683). Involved in the peripheral immune tolerance, contributing to maintain homeostasis by preventing autoimmunity or immunopathology that would result from uncontrolled and overreacting immune responses (PubMed:25691885). Tryptophan shortage inhibits T lymphocytes division and accumulation of tryptophan catabolites induces T-cell apoptosis and differentiation of regulatory T-cells (PubMed:25691885). Acts as a suppressor of anti-tumor immunity (PubMed:14502282, PubMed:23103127, PubMed:25157255, PubMed:25691885). Limits the growth of intracellular pathogens by depriving tryptophan (PubMed:25691885). Protects the fetus from maternal immune rejection (PubMed:25691885).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This product was changed from ascites to tissue culture supernatant on 30th May 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Indoleamine 2 3-dioxygenase (IDO) also known as IDO1 is an enzyme involved in the catabolism of tryptophan to kynurenine. It weighs approximately 45 kDa and it is an important target in immunoregulatory processes. IDO is highly expressed in antigen-presenting cells such as dendritic cells and macrophages as well as in various tumor cells where it helps modulate immune responses. This enzyme can also be measured by using assays like IDO ELISA.
Biological function summary	IDO plays a role in immune response regulation by degrading tryptophan an essential amino acid needed for T-cell proliferation. The depletion of tryptophan and the accumulation of its metabolites such as kynurenine cause immunosuppressive effects within the tissue microenvironment. While IDO functions mostly as a standalone enzyme its activity influences the cellular surroundings by altering the balance of local immune reactions.
Pathways	IDO integrates into the tryptophan metabolism pathway and is important in the kynurenine pathway. Through this pathway it maintains immune homeostasis and cell defense mechanisms. Proteins like kynureninase and kynurenine 3-monooxygenase also participate in the same metabolic processes which further extend the effects of tryptophan metabolism on immune cell behavior.
Associated diseases and disorders	IDO is linked with cancer and chronic inflammatory conditions. In cancer elevated IDO expression suppresses anti-tumor immunity aiding tumor cells to evade immune surveillance. It also plays a role in autoimmune disorders by regulating excessive immune activity. During cancer progression IDO often works in conjunction with immune checkpoint proteins like PD-L1 which further enhances its immunosuppressive capabilities within the tumor microenvironment.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

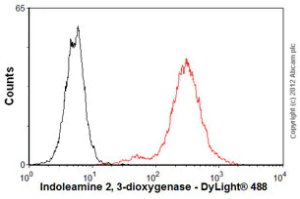
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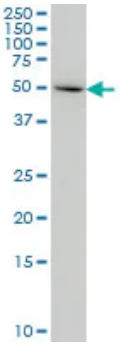
2 product images



Flow Cytometry - Anti-Indoleamine 2, 3-dioxygenase antibody [4D2] (ab55305)

Indoleamine 2, 3-dioxygenase Flow Cytometry staining using mouse Anti-Indoleamine 2, 3-dioxygenase antibody

Overlay histogram showing HeLa cells stained with ab55305 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab55305, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This image was generated using the ascites version of the product.



Western blot - Anti-Indoleamine 2, 3-dioxygenase antibody [4D2] (ab55305)

Indoleamine 2, 3-dioxygenase Western blot staining using mouse Anti-Indoleamine 2, 3-dioxygenase antibody

Indoleamine 2 3-dioxygenase antibody (ab55305) at 1ug/lane + HeLa cell lysate at 25ug/lane. This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-Indoleamine 2, 3-dioxygenase antibody [4D2] (ab55305)

Predicted band size: 45 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.