abcam

ab245737

Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	SP260
Purification technique	Affinity purification Protein A/G
Concentration	1.039 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS by protein A/G.

Reactivity data

IHC-P

Tested

Species	Human

Dilution info	-
Notes	Boil tissue section in EDTA buffer, pH 8.0 for 10 minutes followed by cooling at room temperature for 20 minutes.Incubate for 10 minutes at room temperature.

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	Incubate for 30 minutes at 4Â°C

WB

Tested

Species	Human
Dilution info	-
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	+4°C
Storage information	Do Not Freeze

Notes

ab245737 is the carrier-free version of ab228468.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

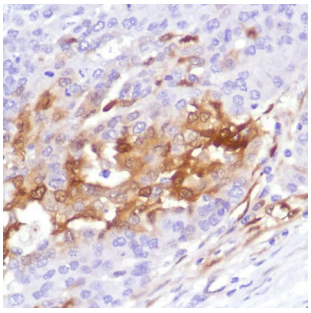
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

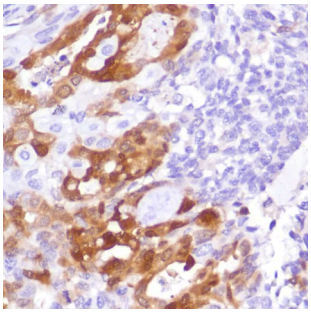
11 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Formalin-fixed, paraffin-embedded human ovarian adenocarcinoma tissue stained for Indoleamine 2, 3-dioxygenase with ab228468 at 1/100 dilution in immunohistochemical analysis. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab228468).

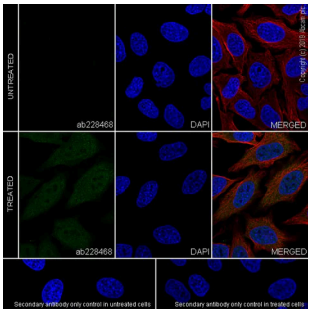


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Formalin-fixed, paraffin-embedded human tonsil tissue stained for Indoleamine 2, 3-dioxygenase with ab228468 at 1/100 dilution in immunohistochemical analysis.

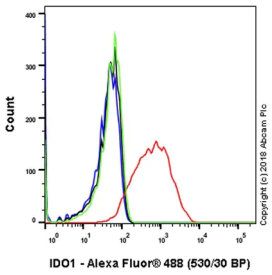
This data was developed using the same antibody clone in a different buffer formulation containing PBS#44; BSA#44; and sodium azide (ab228468)



Immunocytochemistry/ Immunofluorescence - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

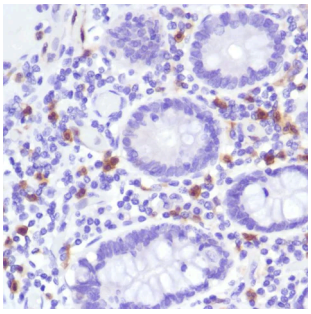
Immunocytochemistry/ Immunofluorescence analysis of HeLa (human cervix adenocarcinoma epithelial cell) treated with 50 ng/ml IFN-gamma for 16 h cells labeling Indoleamine 2, 3-dioxygenase with purified ab228468 at 1/15(9.4µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/ml) dilution. DAPI was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab228468).



Flow Cytometry (Intracellular) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Flow Cytometry (Intracellular) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Intracellular Flow Cytometry analysis of HeLa cells treated with 50ng/ml IFN-gamma for 16hours labeling Indoleamine 2, 3-dioxygenase with purified ab228468 at 1/200 dilution (0.705µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as a secondary antibody. Isotype control -Rabbit monoclonal IgG (ab172730) / Black. Unlableled control -Unlabelled cells / blue. Untreated cells (Green). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab228468).

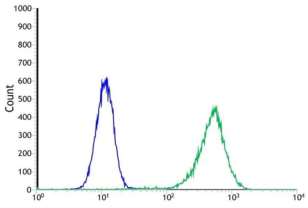


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Formalin-fixed, paraffin-embedded human stomach adenocarcinoma tissue stained for Indoleamine 2, 3-dioxygenase with ab228468 at 1/100 dilution in immunohistochemical analysis.

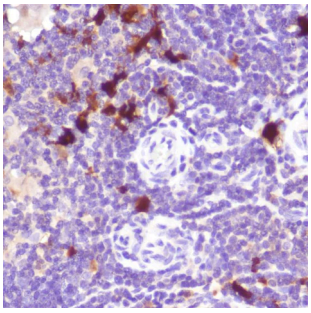
This data was developed using the same antibody clone in a different buffer formulation containing PBS#44; BSA#44; and sodium azide (ab228468)



Flow Cytometry (Intracellular) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Flow Cytometry (Intracellular) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Intracellular Flow Cytometry analysis of IFN-gamma treatedHeLa (human epithelial cell line from cervix adenocarcinoma) cells, labeling Indoleamine 2, 3-dioxygenase with ab228468 1/400 dilution (green) compared to a negative control rabbit IgG (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab228468).

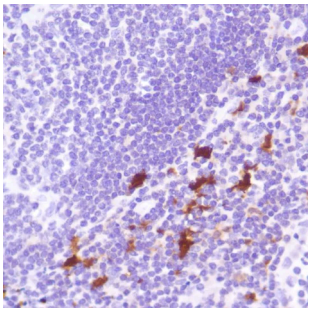


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Formalin-fixed, paraffin-embedded human pancreatic adenocarcinoma tissue stained for Indoleamine 2, 3-dioxygenase with ab228468 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS#44; BSA#44; and sodium azide (ab228468)

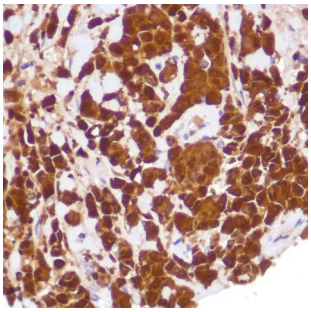


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Formalin-fixed, paraffin-embedded human endometrial adenocarcinoma tissue stained for Indoleamine 2, 3-dioxygenase with ab228468 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS#44; BSA#44; and sodium azide (ab228468)

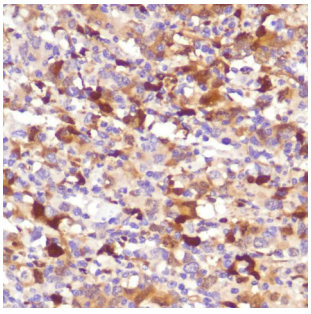


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Formalin-fixed, paraffin-embedded human thymus tissue stained for Indoleamine 2, 3-dioxygenase with ab228468 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS#44; BSA#44; and sodium azide (ab228468)

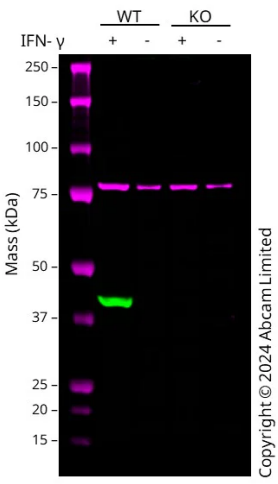


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

Indoleamine 2, 3-dioxygenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Indoleamine 2, 3-dioxygenase antibody

Formalin-fixed, paraffin-embedded human colon tissue stained for Indoleamine 2, 3-dioxygenase with ab228468 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS#44; BSA#44; and sodium azide (ab228468)



Western blot - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - BSA and Azide free (ab245737)

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

This data was developed using the same antibody clone in a different buffer formulation (ab228468).

Western blot: Anti-IDO1 antibody [SP260] (ab228468) staining at 1/1000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab228468 was shown to bind specifically to IDO1. A band was observed at 42 kDa in treated wild-type A549 cell lysates with no signal observed at this size in IDO1 knockout cell line. To generate this image, wild-type and IDO1 knockout A549 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.

All lanes:
Western blot - Anti-Indoleamine 2, 3-dioxygenase antibody [SP260] - C-terminal (ab228468) at 1/1000 dilution

Lane 1:
Wild-type A549 Treated IFN gamma (25 ng/mL, 48 h) ab281500 cell lysate at 20 µg

Lane 2:
Wild-type A549 Vehicle Control IFN gamma (0 ng/mL, 48 h) ab255554 cell lysate at 20 µg

Lane 3:
IDO1 knockout A549 Treated IFN gamma (25 ng/mL, 48 h) ab281489 cell lysate at 20 µg

Lane 4:
IDO1 knockout A549 Vehicle Control IFN gamma (0 ng/mL, 48 h) ab263515 cell lysate at 20 µg

Secondary

All lanes:
Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 45 kDa

Observed band size: 42 kDa

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