abcam

Product datasheet

Anti-PD-L1 antibody [73-10] ab228415



★★★★★ 1 Abreviews 26 References 25 图像

概述

产**品名称** Anti-PD-L1抗体[73-10]

描述 兔单克隆抗体[73-10] to PD-L1

宿主 Rabbit

经测试应用 适用于: IHC-P, WB, ICC/IF, IP, Flow Cyt (Intra), IHC-Fr

种属反应性 与反应: Human

免疫原 Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.

阳性对照 WB: Chinese hamster ovary cell lysate stably expressing PD-L1; MDA-MB-231, H1975, NCI-

H1299, A549, PC3, DU145, A375, U-87 MG, BXPC-3, NIH:OVCAR-3, SK-OV-3, and HeLa whole cell lysates; Human thymus and placenta tissue lysate. IHC-P: Human placenta, lung carcinoma and tonsil tissues. ICC/IF: CHO-PD-L1 cells. Flow Cyt (intra): CHO-PD-L1 cells. IP:

NCI-H1975 whole cell lysate. IHC-Fr: Frozen human tonsil tissue sections

常规说明 Clone 73-10 is also known as clone MKP1A07310.

Clone 73-10 has been tested within Blueprint Phase 2 project.

See here for more details.

Ab228415 (PD-L1 clone 73-10) is a catalogue antibody for Research Use Only. Not for use in diagnostic procedures.

PBS only (BSA/Azide free) version available - see Ab226766

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 production

For more information see here.

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

性能

1

形式 Liquid

存放说明 Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long

term. Avoid freeze / thaw cycle.

存储溶液 pH: 7.2

Preservative: 0.01% Sodium azide

Constituents: PBS, 40% Glycerol, 0.05% BSA

纯**度** Protein A purified

 克隆
 单克隆

 克隆编号
 73-10

 同种型
 IgG

应用

The Abpromise guarantee Abpromise™承诺保证使用ab228415于以下的经测试应用

"应用说明"部分下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

应用	Ab评论	说 明
IHC-P	**** <u>(1)</u>	1/500. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. Recommended incubation time: 10 mins at room temperature
WB		1/1000. Detects a band of approximately 40-60 kDa (predicted molecular weight: 33 kDa).
ICC/IF		1/200.
IP		1/30.
Flow Cyt (Intra)		1/100.
IHC-Fr		Use a concentration of 0.05 μg/ml.

靶标

功能 Involved in the costimulatory signal, essential for T-cell proliferation and production of IL10 and

IFNG, in an IL2-dependent and a PDCD1-independent manner. Interaction with PDCD1 inhibits

T-cell proliferation and cytokine production.

组织特异性 Highly expressed in the heart, skeletal muscle, placenta and lung. Weakly expressed in the

thymus, spleen, kidney and liver. Expressed on activated T- and B-cells, dendritic cells,

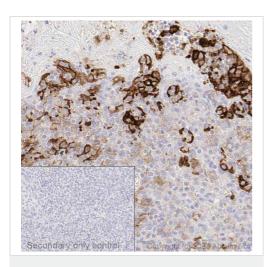
keratinocytes and monocytes.

序列相似性 Belongs to the immunoglobulin superfamily. BTN/MOG family.

Contains 1 lg-like C2-type (immunoglobulin-like) domain. Contains 1 lg-like V-type (immunoglobulin-like) domain.

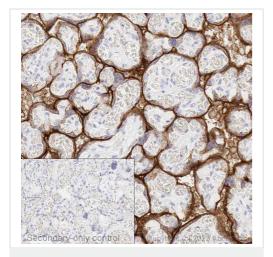
Contains 1 ig-like v-type (infinialogiobalin-like) domai

细胞定位 Cell membrane and Endomembrane system.



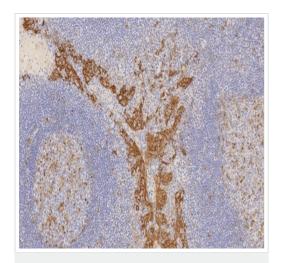
Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemical analysis of formalin-fixed paraffin-embedded human tonsil labelling PD-L1 with ab228415 at a concentration of 0.1µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with an OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was conducted for 32min with ULTRA cell conditioning solution (CC1 pH8.5). ab228415 anti PD-L1 antibody was incubated at 37°C for 16min. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemical analysis of formalin-fixed paraffin-embedded human placenta labelling PD-L1 with ab228415 at a concentration of 0.1µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with an OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was conducted for 32min with ULTRA cell conditioning solution (CC1 pH8.5). ab228415 anti PD-L1 antibody was incubated at 37°C for 16min. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

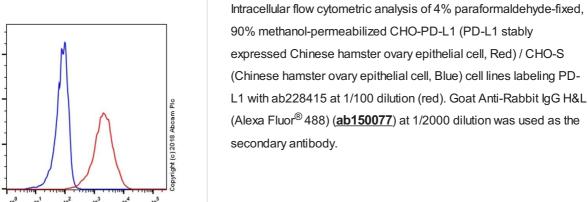


Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

IHC image of ab228415 staining PD-L1 in human tonsil formalin fixed paraffin embedded tissue sections*, performed on a Leica BOND RX (standard Protocol F, Polymer Refine kit). The section was pre-treated using heat mediated antigen retrieval with EDTA buffer (pH9, epitope retrieval solution 2) for 30 mins at 98°C. The section was then incubated with ab228415, 0.06µg/ml working concentration, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system for 8 minutes at room temperature. DAB was used as the chromogen for 10 minutes at room temperature. The section was then counterstained with hematoxylin, blued, dehydrated, cleared and mounted with DPX.

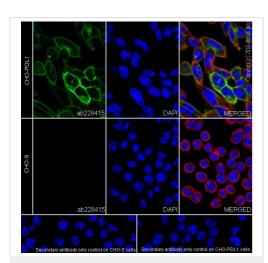
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre

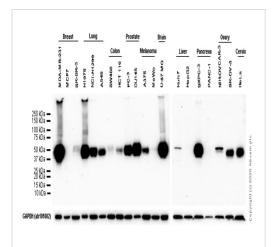


PD-L1 - Alexa Fluor® 488 (530/30 BP)

Flow Cytometry (Intracellular) - Anti-PD-L1 antibody [73-10] (ab228415)



Immunocytochemistry/ Immunofluorescence - Anti-PD-L1 antibody [73-10] (ab228415)



Western blot - Anti-PD-L1 antibody [73-10] (ab228415)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized CHO-PD-L1 (PD-L1 stably expressed Chinese hamster ovary epithelial cell) cells labeling PD-L1 with ab228415 at 1/200 dilution followed by Goat Anti-Rabbit lgG H&L (Alexa Fluor[®] 488) (ab150077) secondary antibody at 1/1,000 dilution (green). Confocal image showing membranous staining on CHO-PD-L1 cells.

The nuclear counter stain is DAPI (blue). Tubulin is detected with anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor[®] 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit lgG H&L (Alexa Fluor[®] 488) (<u>ab150077</u>) secondary antibody at 1/1,000 dilution.

All lanes : Anti-PD-L1 antibody [73-10] (ab228415) at 1/1000 dilution

Lane 1 : MDA-MB-231 (Human breast adenocarcinoma epithelial cell) whole cell lysate

Lane 2 : MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate

Lane 3: SK-BR-3 (Human breast adenocarcinoma epithelial cell) whole cell lysate

Lane 4: H1975 (Human non-small cell lung cancer epithelial cell) whole cell lysate

Lane 5 : NCI-H1299 (Human lung carcinoma epithelial cell) whole cell lysate

Lane 6 : A549 (Human lung carcinoma epithelial cell) whole cell lysate

Lane 7: SW480 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate

Lane 8 : HCT 116 (Human colorectal carcinoma epithelial cell) whole cell lysate

Lane 9 : PC-3 (Human prostate adenocarcinoma epithelial cell) whole cell lysate

Lane 10 : DU 145 (Human prostate carcinoma epithelial cell) whole cell lysate

Lane 11 : A375 (Human malignant melanoma epithelial cell) whole cell lysate

Lane 12: MeWo (Human malignant melanoma fibroblast) whole cell lysate

Lane 13: U-87 MG (Human glioblastoma-astrocytoma epithelial cell) whole cell lysate

Lane 14: Huh7 (Human hepatocellular carcinoma epithelial cell) whole cell lysate

Lane 15 : HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate

Lane 16: BXPC-3 (Human pancreas adenocarcinoma epithelial cell) whole cell lysate

Lane 17: PANC-1 (Human pancreatic epithelioid carcinoma epithelial cell) whole cell lysate

Lane 18 : NIH:OVCAR-3 (Human ovary adenocarcinoma epithelial cell) whole cell lysate

Lane 19: SK-OV-3 (Human ovarian cancer epithelial cell) whole cell lysate

Lane 20 : HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate

Lysates/proteins at 20 µg per lane.

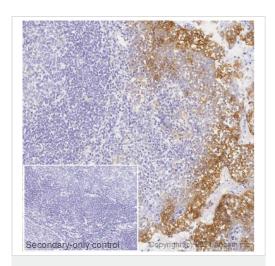
Secondary

All lanes : Goat Anti-Rabbit lgG H&L (HRP) (<u>ab97051</u>) at 1/20000 dilution

Predicted band size: 33 kDa **Observed band size:** 40-60 kDa

Exposure time: 120 seconds

Blocking/Diluting buffer and concentration: 5% NFDM/TBST. Expression of PD-L1 varied widely among the tumor cell lines.

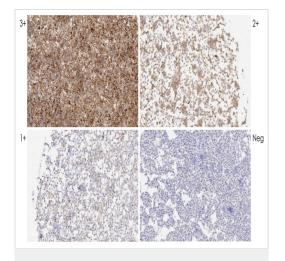


Immunohistochemistry (Frozen sections) - Anti-PD-L1 antibody [73-10] (ab228415)

IHC image of PD-L1 staining in a section of frozen normal human tonsil* performed on a Leica BOND™ system using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab228415, 0.05ugml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

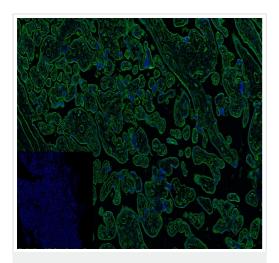
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre



Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

IHC image of ab228415 staining PD-L1 in PD-L1 Dynamic Range Analyte Control formalin fixed paraffin embedded cell lines (HistoCyte Laboratories), performed on a Leica BOND RX (standard Protocol F, Polymer Refine kit). The section was pretreated using heat mediated antigen retrieval with EDTA buffer (pH9, epitope retrieval solution 2) for 30 mins at 98°C. The section was then incubated with ab228415, 0.06µg/ml working concentration, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system for 8 minutes at room temperature. DAB was used as the chromogen for 10 minutes at room temperature. The section was then counterstained with hematoxylin, blued, dehydrated, cleared and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

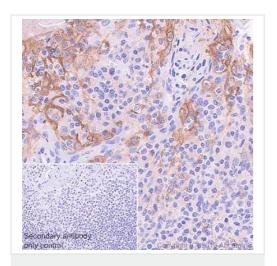


Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Anti-PD-L1 antibody [73-10] (ab228415)

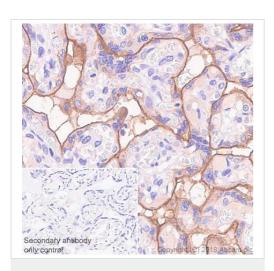
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human tonsil tissue labelling PD-L1 with ab228415 at a dilution of 1:2500. Heat mediated antigen retrieval was performed using AR9 antigen retrieval solution, and microwave treatment for 15 min at 20% power. Anti-Rabbit/Mouse HRP polymer (Vector Labs) was used as secondary antibody. Opal tyramide amplification was performed using Opal 520 fluorophore.. Counterstained with DAPI stain. Image scanned with Vectra 3.0 and analyzed via software.

This image was courteously provided by Dr. Houssein Abdul Sater, Georgia Cancer Center.



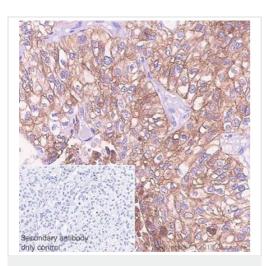
Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) of human tonsil staining PD-L1 with ab228415 at 1/500 dilution. Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 10 mins. The section was incubated with ab228415 for 10 mins at room temperature. The secondary antibody used was ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Counter stained Hematoxylin. Performed on a Leica Biosystems BOND® RX instrument.



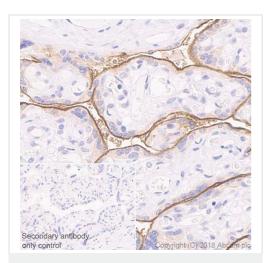
Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) of human placenta staining PD-L1 with ab228415 at 1/500 dilution. Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 10 mins. The section was incubated with ab228415 for 10 mins at room temperature. The secondary antibody used was ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Counter stained Hematoxylin. Performed on a Leica Biosystems BOND® RX instrument.



Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) of human lung carcinoma staining PD-L1 with ab228415 at 1/500 dilution. Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 10 mins. The section was incubated with ab228415 for 10 mins at room temperature. The secondary antibody used was ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Counter stained Hematoxylin. Performed on a Leica Biosystems BOND® RX instrument.

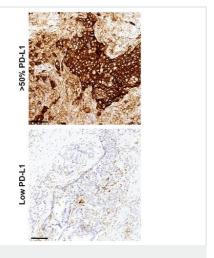


Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemical analysis of paraffin-embedded human placenta tissue labeling PD-L1 with ab228415 at 1/5000 dilution. The tissue was incubated with ab228415 at 4I overnight. followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) ready to use. Membranous and cytoplasmic staining in human placenta (PMID: 12538684) is observed. Counter stained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

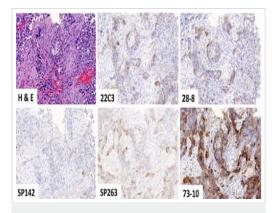
Antigen retrieval: Universal HIER antigen retrieval reagent (10X) (ab208572).



Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Image from Silva MA et al., PLoS One. 2018;13(6):e0196464. Fig 3(B).; 10.1371/journal.pone.0196464.

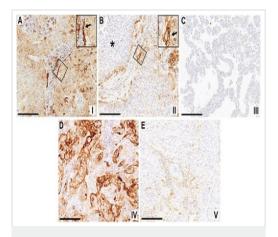
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) Staining PD-L1 in human non-small cell lung cancer tissue with >50% PD-L1-positive tumor cells were compared with tissue with lower PD-L1 expression using 73-10 at 0.25μg/ml incubated for 30 minutes at room temperature. Antigen Retrieval was done with Target Retrieval Solution, high pH. Detection was done with EnVision FLEX/HRP. Hematoxylin EnVision FLEX was used as a counter stain.



Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Image from Tsao MS et al., J Thorac Oncol. 2018;13(9):1302-1311. Fig 3.; 10.1016/j.jtho.2018.05.013 with permission from Elsevier.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) of lung cancer tissue samples. Comparing the staining PD-L1 with different monoclonal antibodies. 73-10 showed higher sensitivity to PD-L1 compared to the other clones. For further details on this image please see PubMed ID: 29800747.



Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Image from Silva MA et al., PLoS One. 2018;13(6):e0196464. Fig 4.; 10.1371/journal.pone.0196464. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) Staining PD-L1 in human non-small cell lung cancer tissue using 73-10 at 0.25µg/ml incubated for 30 minutes at room temperature. Antigen Retrieval was done with Target Retrieval Solution, high pH. Detection was done with EnVision FLEX/HRP. Hematoxylin EnVision FLEX was used as a counter stain.

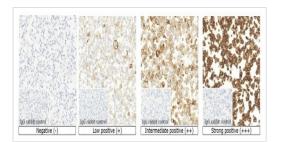
A: Diffuse expression of PD-L1 (IHC) on tumor cell membranes of a squamous cell carcinoma, including central regions of trabeculae. Prominent labeling of cells in the TME compartment at the tumornest-TME interface suggesting presence of an immunological synapse (inset arrow).

B: Patchy expression of PD-L1 in a squamous cell carcinoma at the tumor-nest-TME interface (inset arrow). Minimal to no PD-L1 expression in the trabeculae (asterisk) if compared with (**A**)

C: No to minimal PD-L1 expression in both tumor and TME compartments in an adenocarcinoma.

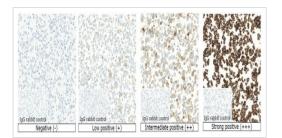
D: Diffuse expression of PD-L1 by tumor-nests in an adenocarcinoma with minimal TME staining.

F: TME expression only. No to minimal PD-L1 expression in tumor cells of a squamous cell carcinoma, with widespread staining in the TME compartment.



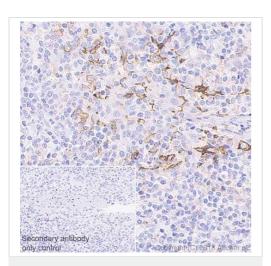
Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemical staining of PD-L1 in formalin-fixed, paraffin embedded reference standard with negative (-), low positive (+), intermediate positive (++) and strong positive (+++) controlled protein expressing cell lines (,CD274 (PD-L1) Expression IHC Reference Standard, catalog ID HD787, horizon) using clone 73-10 [ab228415] at a dilution of 2µg/ml. Incubate for 30 minutes at room temperature. Heat mediated antigen retrieval in high pH buffer (Tris/EDTA buffer, pH 9, during 20 min at 95°C). Block sample with peroxidase blocking buffer (EnVision Flex Peroxidase-Blocking Reagent) for 5 minutes. Signal detection with Autostainer Link from Dako and EnVision Flex Kit, High pH (Code K8000).



Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemical staining of PD-L1 in formalin-fixed, paraffin embedded Formalin-fixed, paraffin-embedded reference standard with negative (-), low positive (+), intermediate positive (++) and strong positive (+++) controlled protein expressing cell lines (,CD274 (PD-L1) Expression IHC Reference Standard', catalog ID HD787, horizon) using clone 73-10 [ab228415] at a dilution of 10µg/ml. Incubate for 30 minutes at 37°C. Heat mediated antigen retrieval in sCC1 (Tris/EDTA buffer, pH 8). Signal detection with BenchMark XT from Roche/Ventana and ultraView Universal DAB Detection Kit (Code 760-500).

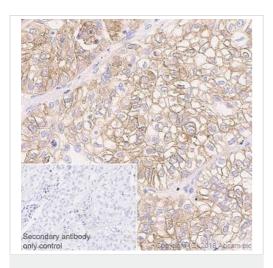


Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling PD-L1 with ab228415 at 1/5000 dilution. The tissue was incubated with ab228415 at 4I overnight, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) ready to use. Cytoplasmic and membranous staining in human tonsil is observed. Counter stained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Antigen retrieval: Universal HIER antigen retrieval reagent (10X) (ab208572).

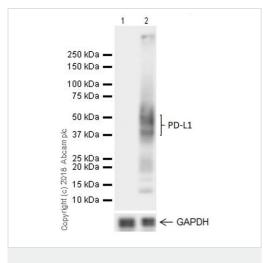


Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)

Immunohistochemical analysis of paraffin-embedded human lung carcinoma tissue labeling PD-L1 with ab228415 at 1/5000 dilution. The tissue was incubated with ab228415 at 4**I** overnight, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) ready to use. Membranous and weakly cytoplasmic staining in human lung carcinoma (PMID: 23460533) is observed. Counter stained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Antigen retrieval: Universal HIER antigen retrieval reagent (10X) (ab208572).



Western blot - Anti-PD-L1 antibody [73-10] (ab228415)

All lanes : Anti-PD-L1 antibody [73-10] (ab228415) at 1/1000 dilution

Lane 1: CHO-S (Chinese hamster ovary epithelial cell)

Lane 2: CHO-PD-L1 (PD-L1 stably expressed Chinese hamster ovary epithelial cell)

Lysates/proteins at 10 µg per lane.

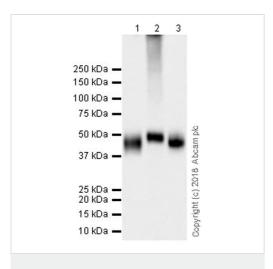
Secondary

All lanes : Goat Anti-Rabbit $\lg G \ H\&L \ (HRP) \ (\underline{ab97051})$ at 1/100000 dilution

Predicted band size: 33 kDa **Observed band size:** 40-60 kDa

Exposure time: 15 seconds

Blocking/Dilution buffer: 5% NFDM/TBST.



Western blot - Anti-PD-L1 antibody [73-10] (ab228415)

All lanes : Anti-PD-L1 antibody [73-10] (ab228415) at 1/1000 dilution

Lane 1 : NCI-H1975 (human non-small cell lung cancer cell line), whole cell lysate

Lane 2 : Human placenta
Lane 3 : Human thymus

Lysates/proteins at 20 µg per lane.

Secondary

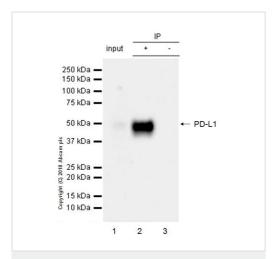
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (<u>ab97051</u>) at 1/50000 dilution

Predicted band size: 33 kDa

Exposure time: 70 seconds

Blocking/Dilution buffer: 5% NFDM/TBST.

The molecular mass observed is consistent with what has been described in the literature (PMID: 26546452).



Immunoprecipitation - Anti-PD-L1 antibody [73-10] (ab228415)

PD-L1 was immunoprecipitated from 0.35 mg of NCI-H1975 (human non-small cell lung cancer cell line) whole cell lysate with ab228415 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab228415 at 1/1,000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5,000 dilution.

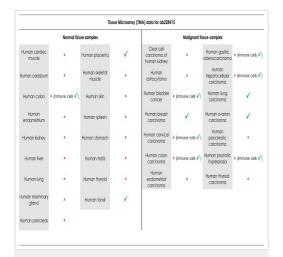
Lane 1: NCI-H1975 whole cell lysate 10 µg (Input).

Lane 2: ab228415 IP in NCI-H1975 whole cell lysate (+).

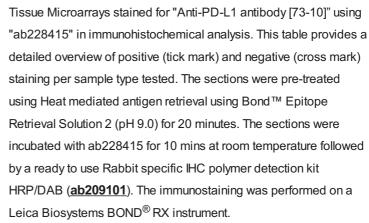
Lane 3: Rabbit monoclonal IgG (<u>ab172730</u>) instead of ab228415 in NCI-H1975 whole cell lysate (-).

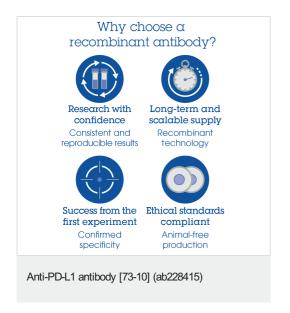
Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure time: 30 seconds.



Immunohistochemistry (Formalin/PFA-fixed paraffinembedded sections) - Anti-PD-L1 antibody [73-10] (ab228415)





Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- · Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- · We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.cn/abpromise or contact our technical team.

Terms and conditions

• Guarantee only valid for products bought direct from Abcam or one of our authorized distributors