abcam

Product datasheet

Anti-CD45 antibody ab10559

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Overview

Product name	Anti-CD45 antibody
Description	Rabbit polyclonal to CD45
Host species	Rabbit
Tested applications	**Suitable for:** WB, Flow Cyt, IHC-P, IHC-Fr, ICC/IF
Species reactivity	**Reacts with:** Human, Pig, Monkey
Immunogen	Synthetic peptide conjugated to KLH derived from within residues 1250 to the C-terminus of Human CD45.Read Abcam's proprietary immunogen policy(Peptide available as ab17550.)
Positive control	This antibody gave a positive signal in Jurkat whole cell lysate and Hodgkins lymphoma tissue sections.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituent: PBS Batches of this product that have a concentration < 1mg/ml may have BSA added as a stabilising agent. If you would like information about the formulation of a specific lot, please contact our scientific support team who will be happy to help.
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab10559** in the following tested applications.

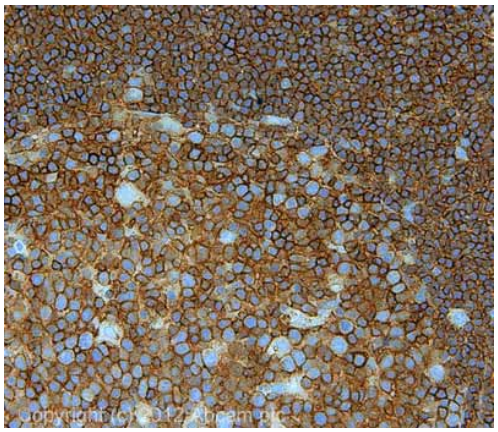
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/500. Detects a band of approximately 155 kDa (predicted molecular weight: 147 kDa).
Flow Cyt	★★★★☆	Use at an assay dependent concentration. ab171870 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.
IHC-P	★★★★★	Use a concentration of 1 µg/ml. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.
IHC-Fr	★★★★☆	Use at an assay dependent concentration.
ICC/IF	★★★★★	Use at an assay dependent concentration.

Target

Function	Protein tyrosine-protein phosphatase required for T-cell activation through the antigen receptor. Acts as a positive regulator of T-cell coactivation upon binding to DPP4. The first PTPase domain has enzymatic activity, while the second one seems to affect the substrate specificity of the first one. Upon T-cell activation, recruits and dephosphorylates SKAP1 and FYN.
Involvement in disease	Defects in PTPRC are a cause of severe combined immunodeficiency autosomal recessive T-cell-negative/B-cell-positive/NK-cell-positive (T(-)B(+)NK(+) SCID) [MIM:608971]. A form of severe combined immunodeficiency (SCID), a genetically and clinically heterogeneous group of rare congenital disorders characterized by impairment of both humoral and cell-mediated immunity, leukopenia, and low or absent antibody levels. Patients present in infancy recurrent, persistent infections by opportunistic organisms. The common characteristic of all types of SCID is absence of T-cell-mediated cellular immunity due to a defect in T-cell development. Genetic variations in PTPRC are involved in multiple sclerosis susceptibility (MS) [MIM:126200]. MS is a neurodegenerative disorder characterized by the gradual accumulation of focal plaques of demyelination particularly in the periventricular areas of the brain. Peripheral nerves are not affected. Onset usually in third or fourth decade with intermittent progression over an extended period. The cause is still uncertain.
Sequence similarities	Belongs to the protein-tyrosine phosphatase family. Receptor class 1/6 subfamily. Contains 2 fibronectin type-III domains. Contains 2 tyrosine-protein phosphatase domains.
Domain	The first PTPase domain interacts with SKAP1.
Post-translational modifications	Heavily N- and O-glycosylated.
Cellular localization	Membrane. Membrane raft. Colocalized with DPP4 in membrane rafts.

Images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD45 antibody (ab10559)

IHC image of ab10559 staining in human Hodgkins lymphoma formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab10559, 5µg/ml, 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. 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.

Western blot - Anti-CD45 antibody (ab10559)

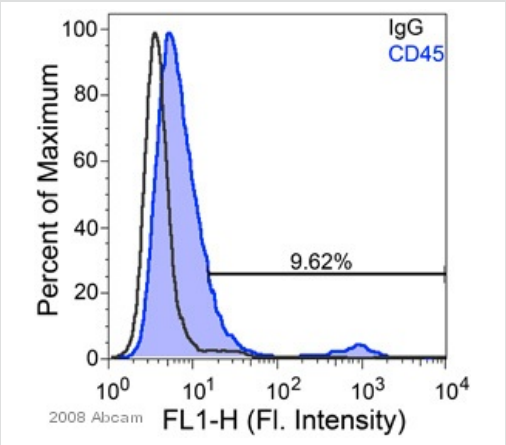
ab10559 rabbit polyclonal to CD45 (1/500) with secondary goat anti-rabbit IgG ab6721 (1/5000).

Expected molecular weight: 147 kDa. WB exposure time: 1min 30sec

Lanes 1 to 10: 20µg of cell lysate per lane
Lanes 6 to 10: ab17550 CD45 blocking peptide used at 1µg/ml

Lane 1: HeLa Nuclear Extract (ab10559)
Lane 2: HeLa Whole Cell Lysate (ab10559)
Lane 3: A431 Whole Cell Lysate (ab10559)
Lane 4: Jurkat Whole Cell Lysate (ab10559)
Lane 5: HEK293 Whole Cell Lysate (ab10559)
Lane 6: HeLa Nuclear Extract (ab10559+ ab17550)
Lane 7: HeLa Whole Cell Lysate (ab10559+ ab17550)
Lane 8: A431 Whole Cell Lysate (ab10559+ ab17550)
Lane 9: Jurkat Whole Cell Lysate (ab10559+ ab17550)
Lane 10: HEK293 Whole Cell Lysate (ab10559+ ab17550)

A strong band, slightly higher was seen in Jurkat cell lysate. The band was blocked using the immunising peptide (ab17550). It is likely that the band is CD45.



Flow Cytometry - Anti-CD45 antibody (ab10559)

Asynchronous KM-H2 cells were pelleted and labeled by indirect immunofluorescence. Cells were stained with ab10559 (1/200) for 30min at 4'C, washed and then stained with goat anti-rabbit alexafluor 488 (1/200). Forward/Side scatter were used to eliminate cellular debris. The accompanying marker was applied such that only 2% of the IgG control was positive. Based on the accompanying image, approximately 9.62% of cells exhibited positive staining for anti-CD45. Since KM-H2 have low levels of CD45 transcripts, it is expected that they have low levels of CD45 on their surface which is reflected in the ~9% positive. This image is taken from an Abreview.

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