abcam

ab222914

Alexa Fluor® 488 Anti-CD68 antibody [KP1]

Anti-CD68 antibody [KP1] - Alexa Fluor® 488 conjugated (ab222914) is a mouse recombinant monoclonal antibody detecting CD68 in **Flow Cytometry (Intra), IHC-P, mIHC**. Suitable for **Human**.

- Multiplex IHC validated on the Leica BOND® MAX using Opal reagents
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | Advanced Validation

Key facts

Isotype	IgG1
Host species	Mouse
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	KP1
Purification technique	Affinity purification Protein A/G
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

ICC

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/12500
Notes	-

mIHC

Tested

Species	Human
Dilution info	1/100
Notes	-

ICC/IF

Expected

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

Target data

See full target information CD68

Function	Could play a role in phagocytic activities of tissue macrophages, both in intracellular lysosomal metabolism and extracellular cell-cell and cell-pathogen interactions. Binds to tissue- and organ-specific lectins or selectins, allowing homing of macrophage subsets to particular sites. Rapid recirculation of CD68 from endosomes and lysosomes to the plasma membrane may allow macrophages to crawl over selectin-bearing substrates or other cells.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
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, Store in the dark

Notes

What is this antibody validated in?
Alexa Fluor® 488 Anti-CD68 antibody [KP1] (ab222914) is a mouse recombinant monoclonal antibody and is validated for use in Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P), Multiplex IHC (mIHC) in Human samples.

Related products
Antibody clone KP1 is also available pre-conjugated to a variety of labels for your convenience – Anti-CD68 Alexa Fluor® 488 [KP1] (ab222914).

Other related products
We have a range of other formats of antibody clone [KP1] also available for your convenience: ab845, ab955, Alexa Fluor® 488 - ab222914, Carrier free - ab233172, Alexa Fluor® 555 - ab279323, Alexa Fluor® 594 - ab282650, Alexa Fluor® 647 - ab314474, Biotin - ab317601

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Supplementary info

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

Activity summary	CD68 is a glycoprotein that functions as a scavenger receptor. It plays an important role in the regulation of cellular debris and apoptotic cell clearance. Researchers often refer to it as KP1 or macrosialin in the literature. CD68 with a molecular weight of approximately 110 kDa is highly expressed in macrophages and monocytes. The mucin-like structure of CD68 allows it to be heavily glycosylated which aids in its function. Researchers detect CD68 in tissues through methods like immunohistochemistry (IHC) immunofluorescence and CD68 staining and it is widely used as a macrophage marker in research.
Biological function summary	CD68 facilitates functions associated with the innate immune response. It serves as an important part of macrophages which contribute to immune surveillance and tissue homeostasis. Though it primarily operates on its own in some contexts CD68 might assist in forming complexes with other receptors to modulate phagocytic activity. This target is significant in atherosclerotic plaque stability as macrophages engulf lipids and cell debris through processes facilitated by CD68.
Pathways	CD68 is involved in pathways connected to inflammation and phagocytosis. The CD68 protein works closely with other scavenger receptors like CD36 to mediate uptake of oxidized low-density lipoproteins (oxLDL) in the lipid metabolism pathway. Additionally CD68 engagement can influence the toll-like receptor (TLR) signaling pathways thereby linking innate immunity and inflammatory responses critical for host defense and disease progression.
Associated diseases and disorders	CD68 is associated with atherosclerosis and multiple sclerosis. In atherosclerosis its role becomes evident as it accumulates in macrophages within the plaques making it a marker of disease severity. In multiple sclerosis CD68 expression in macrophages and microglia indicates active demyelination and inflammation. It

also relates to proteins such as CD36 in atherosclerosis where both mediate the uptake of modified LDL contributing to foam cell formation in plaques.

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

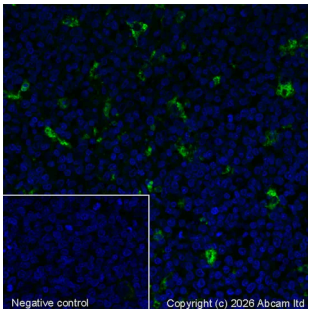
We do not recommend this combination. It is not covered by our product promise.

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.

4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 488 Anti-CD68 antibody [KP1] (ab222914)

CD68 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of FFPE Human Tonsil using mouse Anti-CD68 antibody

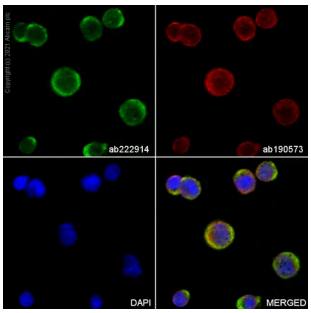
Immunofluorescence staining of CD68 staining in a section of formalin-fixed paraffin-embedded Human Tonsil*.

Performed on a Leica BOND. The section was pre-treated using heat mediated antigen retrieval with EDTA (pH 9.0) using retrieval settings of 100°C for 40 minutes. The section was then incubated at room temperature for 1 hour with ab222914 at 1/100 dilution (shown in green). Nuclear DNA was labelled with DAPI (shown in blue). The section was then mounted using Dako Fluorescence Mounting Medium ®.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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

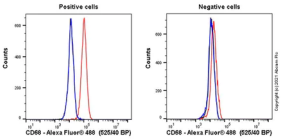
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre.



Immunocytochemistry - Alexa Fluor® 488 Anti-CD68 antibody [KP1] (ab222914)

CD68 Immunocytochemistry staining using mouse Anti-CD68 antibody

ab222914 staining CD68 in THP-1 cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab222914 at 1/100 dilution (shown in Green) and ab190573, Rabbit monoclonal to alpha Tubulin (Alexa Fluor® 647), at 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



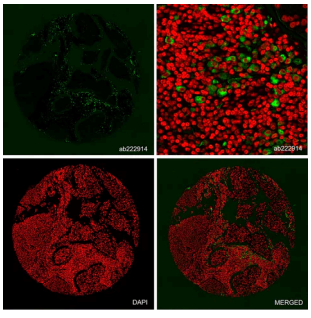
Flow Cytometry (Intracellular) - Alexa Fluor® 488 Anti-CD68 antibody [KP1] (ab222914)

CD68 Flow Cytometry (Intracellular) staining using mouse Anti-CD68 antibody

Flow cytometry overlay histogram showing left THP1 positive cells and right negative Jurkat cells stained with ab222914 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab222914) (1x 10^6 in 100 µL at 0.04 µg/mL (1/12500)) for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1κ Alexa Fluor® 488 used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

This antibody gave a positive signal in THP1 cells fixed with 80% methanol (5 min) / permeabilized with 0.1% PBS-Triton X-100 for 15 min used under the same conditions.



Multiplex immunohistochemistry - Alexa Fluor® 488 Anti-CD68 antibody [KP1] (ab222914)

Immunofluorescence analysis of human bladder transitional cell carcinoma labelled with ab222914. Image was acquired using Cell DIVE Multiplexed Imaging Solution (Leica Microsystems).

Formalin fixed paraffin embedded (FFPE) sections were incubated with ab222914 at 1/100 dilution, for 1h at room temperature. Nuclear DNA was labelled with DAPI (Red). Deparaffinization, antigen retrieval, biomarker labeling and imaging was performed following Cell DIVE recommended standard protocol. Cell DIVE automatically processed the image to perform autofluorescence removal, distortion correction, blank glass subtraction, flat-field correction, and stitching.

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