## CD68 Monoclonal Antibody (KP1), eBioscience™

### Catalog Number: 14-0688-82

#### Details

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Size</td>
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<td>Host/Isotope</td>
<td>Mouse / IgG1, kappa</td>
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<td>Class</td>
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<td>Type</td>
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<td>Clone</td>
<td>KP1</td>
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<td>Conjugate</td>
<td>Unconjugated</td>
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<td>Form</td>
<td>Liquid</td>
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<td>Concentration</td>
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<td>Purification</td>
<td>Affinity chromatography</td>
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<td>Storage buffer</td>
<td>PBS, pH 7.2</td>
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<tr>
<td>Contains</td>
<td>0.09% sodium azide</td>
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<tr>
<td>Storage Conditions</td>
<td>4°C</td>
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</table>

#### Species Reactivity

- **Species reactivity:** Human
- **Published species:** Human, Mouse, Not Applicable

#### Tested Applications

- **Flow Cytometry (Flow):** Assay-Dependent
  - Dilution: 1 µg/mL
  - 1-5 µg/mL
- **Immunohistochemistry (Frozen):** (IHC (F))
- **Immunohistochemistry (Paraflin):** (IHC (P))
  - Dilution: 1 µg/mL
- **Immunoprecipitation (IP):** Assay-Dependent
- **Western Blot (WB):** Assay-Dependent
- **Immunocytochemistry (ICC/IF):** 5 µg/ml

#### Published Applications

- **Immunohistochemistry (IHC):** See 5 publications below
- **Immunocytochemistry (ICC/IF):** See 3 publications below
- **Immunohistochemistry (Paraflin):** (IHC (P))
  - See 3 publications below
- **Flow Cytometry (Flow):** See 3 publications below
- **Immunohistochemistry (Frozen):** (IHC (F))
  - See 1 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

### Background/Target Information

**CD68 (Macrophasin) is a 110 kDa integral membrane glycoprotein predominantly expressed on the intracellular lysosomes of monocytes and macrophages and to a lesser extent by dendritic cells and peripheral blood granulocytes. Also, CD68 could play a role in phagocytic activities of tissue macrophages, both in intracellular lysosomal metabolism and extracellular cell-cell and cell-pathogen interactions. CD68 is expressed by interdigitating reticulum cells in tonsil and to a lesser extent by dendritic cells and peripheral blood granulocytes. The function has not been fully elucidated but based on homology and structure, CD68 may play a role in antigen processing or presentation and protection of the lysosomal membrane from hydrolytic enzymes. Reports have also shown expression in activated T cells, and about 40% of peripheral blood B-lymphocytes and 50% of all B-ALL. The KP1 antibody has also been reported to stain fibroblasts which may be due to a conserved epitope rather than fibroblasts expressing CD68. Applications Tested: This KP1 antibody has been reported for use in flow cytometric analysis, immunoprecipitation, western blotting, immunohistochemical staining of frozen tissue sections, and immunohistochemical staining of formalin-fixed paraffin embedded tissue sections. Applications Tested: This KP1 antibody has been tested by immunohistochemistry with both low and high pH antigen retrieval on FFPE tissue. Either antigen retrieval method can be used. This antibody can be used at less than or equal to 1 µg/mL. It is recommended that the antibody be carefully titrated for optimal performance in the assay of interest. Purity: Greater than 90%, as determined by SDS-PAGE. Aggregation: Less than 10%, as determined by HPLC. Filtration: 0.2 µm post-manufacturing filtered.**

### For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Production documentation, specifications and/or accompanying package inserts (“Documentation”). For claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer by the Seller shall be for Buyer’s sole and exclusive interest. Purity: Greater than 90%, as determined by SDS-PAGE. Aggregation: Less than 10%, as determined by HPLC. Filtration: 0.2 µm post-manufacturing filtered.

Thermo Fisher Scientific
1025 Science Center Drive
San Diego, CA 92121

Website: thermofisher.com/ebioscience
Customer Service (US): 1-888-999-1371
thermofisher.com/contactus

**Performance guaranteed**
CD68 Antibody (14-0688-82) in ICC/IF

Immunofluorescence analysis of CD68 was performed using formalin-fixed paraffin-embedded human tonsil tissue sections. To expose the target protein, heat-induced epitope retrieval was performed on de-paraffinized sections using eBioscience™ IHC Antigen Retrieval Solution - High pH (10X) (Product # 00-4956-58) diluted to 1X solution in water in a microwave oven at 100 degree Celsius for 15 minutes. Following antigen retrieval, the sections were blocked with 2% normal goat serum in 1X PBS for 45 minutes at room temperature and then probed with or without CD68 Monoclonal Antibody (KP1) (Product # 14-0688-80) at 5 µg/mL in 0.1% BSA, incubated at 4 degree Celsius overnight and then labeled with Goat anti-Mouse IgG (H+L) Superclonal™ Secondary Antibody, Alexa Fluor® 488 conjugate (Product # A28175) at a dilution of 1:2000 for 45 minutes at room temperature (Panel a: green). Nuclei (Panel b: blue) were stained with ProLong™ Diamond Antifade Mountant with DAPI (Product # P36962). F-actin (Panel c: red) was stained with Rhodamine Phalloidin (Product # R415, 1:300). Panel d represents the merged image showing membrane localization. Panel e shows untreated cells with no signal. Panel f represents control cells with no primary antibody to assess background. The images were captured at 60X magnification.

CD68 Antibody (14-0688-82) in IHC (P)

Immunohistochemical analysis of CD68 was performed using formalin-fixed paraffin-embedded human tonsil tissue sections. To expose the target protein, heat-induced epitope retrieval was performed on de-paraffinized sections using eBioscience™ IHC Antigen Retrieval Solution - High pH (10X) (Product # 00-4956-58) diluted to 1X solution in water in a microwave oven at 100 degree Celsius for 15 minutes. Following antigen retrieval, the sections were blocked with 2% normal goat serum in 1X PBS for 45 minutes at room temperature and then probed with or without CD68 Monoclonal Antibody (KP1) (Product # 14-0688-80) at 5 µg/mL in 0.1% BSA, incubated at 4 degree Celsius overnight and then labeled with Goat anti-Mouse IgG (H+L) Superclonal™ Secondary Antibody, Alexa Fluor® 488 conjugate (Product # A28175) at a dilution of 1:2000 for 45 minutes at room temperature. ReadyProbes™ Tissue Autofluorescence Quenching Kit (Product # R37630) was used to quench autofluorescence from the tissues. Nuclei were stained with DAPI (Product # D1306) and the sections were mounted using ProLong™ Glass Antifade Mountant (Product # P36984). The images were captured on EVOS™ M7000 Imaging System (Product # AMF7000) at 20X magnification and externally deconvoluted.

CD68 Antibody (14-0688-82) in IHC (P)

Immunohistochemical analysis of CD68 was performed using formalin-fixed paraffin-embedded human tonsil tissue sections. To expose the target protein, heat-induced epitope retrieval was performed on de-paraffinized sections using eBioscience™ IHC Antigen Retrieval Solution - High pH (10X) (Product # 00-4956-58) diluted to 1X solution in water in a microwave oven at 100 degree Celsius for 15 minutes. Following antigen retrieval, the sections were blocked with 2% normal goat serum in 1X PBS for 45 minutes at room temperature and then probed with or without CD68 Monoclonal Antibody (KP1) (Product # 14-0688-80) at 5 µg/mL in 0.1% BSA, incubated at 4 degree Celsius overnight and then labeled with Goat anti-Mouse IgG (H+L) Superclonal™ Secondary Antibody, Alexa Fluor® 488 conjugate (Product # A28175) at a dilution of 1:2000 for 45 minutes at room temperature. ReadyProbes™ Tissue Autofluorescence Quenching Kit (Product # R37630) was used to quench autofluorescence from the tissues. Nuclei were stained with DAPI (Product # D1306) and the sections were mounted using ProLong™ Glass Antifade Mountant (Product # P36984). The images were captured on EVOS™ M7000 Imaging System (Product # AMF7000) at 20X magnification and externally deconvoluted.
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CD68 Antibody (14-0688-82) in IHC (P)

Immunohistochemistry on formalin-fixed paraffin embedded human cerebellar white matter, using 1 µg/mL of Mouse IgG1 Isotype Control (left) or 1 µg/mL of Anti-Human CD68 Purified (right) followed by biotinylated Anti-Mouse IgG, and DAB visualization. Nuclei are counterstained with hematoxylin.
14-0688-82 was used in Immunohistochemistry to demonstrate the presence of viral nucleocapsid protein in extracellular vesicles and microvascular disease in the brain of a patient undergoing epilepsy surgery shortly after SARS-CoV-2 infection.

Human / Not Cited


14-0688-82 was used in Immunohistochemistry to study the tumour-infiltrating immune cells associated with prognosis of gastric cancer.

Human / 1:800


14-0688 was used in Immunohistochemistry-immunofluorescence to develop a mouse model of rhinovirus-induced asthma exacerbation.

Human / Not Cited


14-0688-82 was used in Immunohistochemistry to show that the induction of exosomal microRNAs from human nasal epithelial cells upon airborne particulate matter exposure promotes proinflammatory M1 macrophage polarization via downregulated ROR expression.

Human / 1:100


14-0688-82 was used in Immunohistochemistry to study whether central nervous system (CNS) delivery of anti-CD52 antibodies reduces disease severity and the neuroinflammatory burden in the experimental autoimmune encephalomyelitis (EAE) model.

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Human / Not Cited


14-0688-82 was used in Immunohistochemistry to study whether central nervous system (CNS) delivery of anti-CD52 antibodies reduces disease severity and the neuroinflammatory burden in the experimental autoimmune encephalomyelitis (EAE) model.
14-0688-82 was used in Immunohistochemistry-paraffin to identify hexokinase 3 as a promising target in the context of atherosclerosis.

**Human / Not Cited**

British journal of pharmacology (Aug 2021; 178: 3124)

"Regulation of glycolytic genes in human macrophages by oxysterols: a potential role for liver X receptors."


PubMed Article URL:http://dx.doi.org/10.1016/j.bjp.2020.107665

14068882 was used in immunohistochemistry-paraffin to section examine the role of the proresolving protein annexin A1 in healing after wire injury.

**Human / 1:100**

Arteriosclerosis, thrombosis, and vascular biology (Feb 2017; 37: 312)


PubMed Article URL:http://dx.doi.org/10.1161/ATVBAHA.116.308744

3 Flow Cytometry References

<table>
<thead>
<tr>
<th>Species / Dilution</th>
<th>Summary</th>
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<tr>
<td>Human / Not Cited</td>
<td>14-0688-82 was used in Flow Cytometry/Cell sorting to find that the TME induces tumor cells to produce retinoic acid (RA), which polarizes intratumoral monocyte differentiation toward TAMs and away from DCs via suppression of DC-promoting transcription factor If4.</td>
</tr>
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</table>

**Human / 1:200**

Cell reports (May 2020; 31: )

"Interplay between Liver X Receptor and Hypoxia Inducible Factor 1 Potentiates Interleukin-1 Production in Human Macrophages." 


PubMed Article URL:http://dx.doi.org/10.1016/j.celrep.2020.107665

14-0688-82 was used in Flow cytometry-paraffin section to study the biological mechanisms that drive hypomethylating agent therapy failure at the stem-cell level to uncover vulnerabilities in the disease and halt its evolution.

**Human / Not Cited**

Nature medicine (Mar 2022; 28: 557)

"Stem cell architecture drives myelodysplastic syndrome progression and predicts response to venetoclax-based therapy."


PubMed Article URL:http://dx.doi.org/10.1038/s41591-022-01696-4
**Mouse / 1:100**

14-0688 was used in Flow cytometry/Cell sorting to define the mRNA and protein abundance of CD36 in myelin-containing phagocytes.

Journal of neuroinflammation (Jul 2020; 17: )
"CD36-mediated uptake of myelin debris by macrophages and microglia reduces neuroinflammation."
PubMed Article URL: http://dx.doi.org/10.1186/s12974-020-01899-x

<table>
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Cancer research (Dec 2013; 73: 7254)
"Lenalidomide inhibits lymphangiogenesis in preclinical models of mantle cell lymphoma."
Author(s): Song K, Herzog BH, Sheng M, Fu J, McDaniel JM, Chen H, Ruan J, Xia L
PubMed Article URL: http://dx.doi.org/10.1158/0008-5472.CAN-13-0750