IBA1/AIF1 Chicken Polyclonal Antibody

CPCA-IBA1

Ordering Information
Web *www.encorbio.com*
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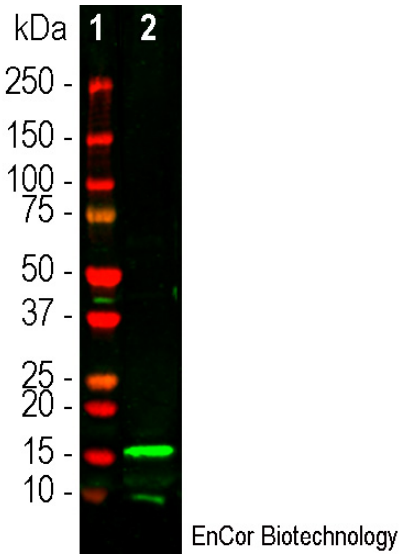
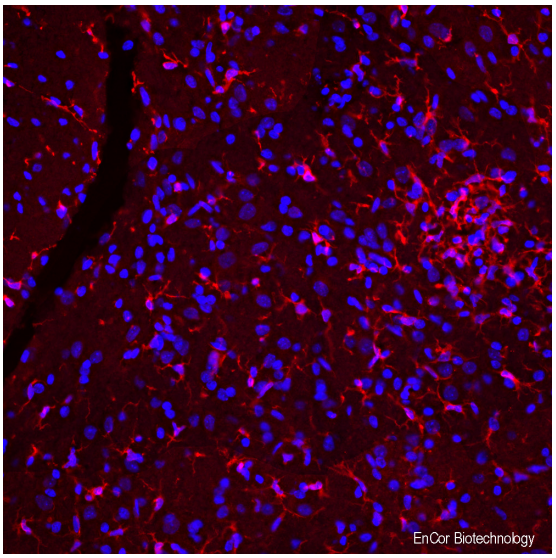
HGNC Name: *AIF1*
UniProt: *P55008*
RRID: *AB_2923485*
Immunogen: *Peptide identical to part of the C-terminal of human IBA1 coupled to KLH*
Format: *Concentrated IgY preparation in PBS plus 0.02% NaN_3*
Storage: *Store at 4°C*
Recommended dilutions:
WB: 1:1,000-5,000. IF 1:2,000-5,000, IHC: 1:10,000

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Chicken		17kDa	Hu, Rt, Ms



Western blot analysis of chicken pAb to IBA1, CPCA-IBA1, dilution 1:1,000 in green: [1] protein standard (red) and [2] rat spleen crude homogenate. The band at about 15kDa mark corresponds to IBA1 protein. IBA1 is a relatively minor protein of brain and is much more abundant in spleen, so the 15kDa band is less obvious in CNS lysates.



Rat spinal cord section, stained with CPCA-IBA1, dilution 1:1,000, in red. Microglia are very small cells with fine processes spreading in three dimensions and so are best visualized in a confocal Z stack, see Poster 27. Nuclear DNA is shown with DAPI stain in blue.

Background: IBA1 is an acronyn for "ionized Calcium binding adapter molecule 1", and the protein is also known as AIF1 for "allograft inflammatory factor 1". AIF1 was originally identified, cloned and sequenced as a protein heavily upregulated in an animal model of graft rejection (1). The AIF1 protein was localized in macrophages and neutrophils surrounding and infiltrating the graft site. Shortly afterwords the same protein was identified a gene product which had some interesting properties, including Calcium binding and the important observation that IBA1 was only expressed in hematopoietic cells (2). IBA1 and AIF1 were subsequently found to be identical, a small globular 17kDa molecule belonging to the "EF" hand superfamily of Calcium binding proteins. Since the only hematopoietic cells and in the neuropil of the central nervous system are microglia, suitable IBA1 antibodies are widely used to identify microglial cells in sections and tissues (3). In tissue samples from which they have not been washed out by perfusion, lymphocytes within blood vessels are also IBA1 positive. Microglia are the immunocompetent cells of the CNS and are extremely important in responses to injury and disease. Microglial are small but very active cells which constantly send processes probing their neighborhood and which alter morphology and are induced to divide following a variety of CNS compromises (4). Many important and highly cited papers have made use of IBA1 antibodies as markers of microglia (e.g. 5,6). The CPCA-IBA1 antibody was made against the C-terminal peptide of human IBA1 coupled to keyhole limpet hemocyanin. It works well on western blots, on cells in culture and on ICC and IHC material. We market a rabbit polyclonal to IBA1 RPCA-IBA1 and also a rabbit antibody to coronin 1a RPCA-Cor1a, another hematopoietic protein specifically expressed in microglia in the nervous system.

References:

1. Utans U, Arceci RJ, Yamashita Y, Russell ME. Cloning and characterization of allograft inflammatory factor-1: a novel macrophage factor identified in rat cardiac allografts with chronic rejection. J. Clin. Invest. 95:2954–62 (1995). 2. Ito D, et al. Microglia-specific localisation of a novel Calcium binding protein, Iba1. Brain Res. Mol. Brain Res. 57:1-9 (1998). 3. Ahmed Z, et al. Actin-binding proteins Coronin-1a and IBA-1 are effective microglial markers for use in Immunohistochemistry. J. Histochem. Cytochem. 55:687-700 (2007). 4. Nimmerjahn A, Kirchhoff F, Helmchen F. Resting Microglial Cells Are Highly Dynamic Surveillants of Brain Parenchyma in Vivo. Science 308:1314-8 (2005). 5. Cardona AE, et al. Control of microglial neurotoxicity by the fractalkine receptor. Nat. Neurosci. 9:917-24 (2006). 6. Mildner A, et al. Microglia in the adult brain arise from Ly-6ChiCCR2+ monocytes only under defined host conditions. Nat. Neurosci. 10:1544-53 (2007).

Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Co—Cow Pi—Pig Ho—Horse Ch—Chicken Dr—D. rerio Dm—D. melanogaster Sm—S. mutans Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.