

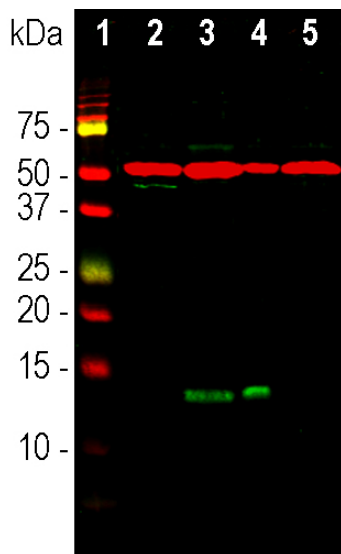
Ordering Information
 Web www.encorbio.com
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HGNC Name: FABP7
UniProt: O15540
RRID: AB_2737420
Immunogen: Recombinant full length human FABP7 expressed in and purified from *E. coli*.
Format: Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN₃
Storage: Stable at 4°C for one year, for longer term store at -20°C
Recommended dilutions:
 WB: 1:1,000-5,000. IF/ICC 1:2,000-5,000

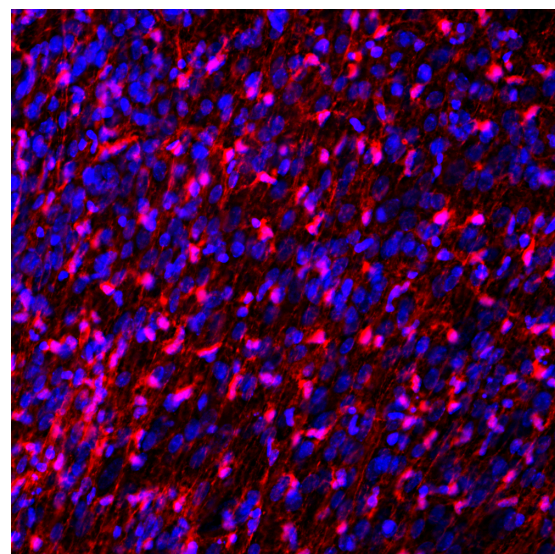
References:

- Gordon JI, et al. Intracellular fatty-acid-binding proteins and their genes: useful models for diverse biological questions. *Curr. Opin. Lipidology* 2:125-137 (1991).
- Hertzel AV, Bernlohr D. The mammalian fatty acid-binding protein multigene family: molecular and genetic insights into function. *Trends Endocrinol. Metab.* 11:175-80 (2000).
- Feng L, Hatten ME, Heintz N. Brain Lipid-Binding Protein (BLBP): A Novel Signaling System in the Developing Mammalian CNS. *Neuron* 12:895-908 (1994).
- Xu LZ, et al. Ligand specificity of brain lipid-binding protein. *J. Biol. Chem.* 271:24711-9 (1996).
- Liang Y, et al. Gene expression profiling reveals molecularly and clinically distinct subtypes of glioblastoma multiforme. *PNAS* 102:5814-9 (2005).
- Owada Y, et al. Altered emotional behavioral responses in mice lacking brain-type fatty acid-binding protein gene. *Eur. J. Neurosci.* 24:175-87 (2005).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC	Rabbit		14kDa	Hu, Rt, Ms



Western blot analysis of whole brain and neuron-glia cell culture lysates using rabbit pAb to FABP7, RPCA-FABP7, dilution 1:2,000 in green, and mouse mAb to β -tubulin, MCA-1B12, dilution 1:10,000 in red: [1] protein standard, [2] adult rat brain, [3] E18 embryonic rat brain, [4] rat neuron-glia cell culture and [5] adult mouse brain lysates. The band at ~14kDa corresponds to FABP7 detected only in developing tissue and cells, while the 50kDa band represents the β -tubulin protein which is present in all preparations.



Immunofluorescent analysis rat embryonic brain section stained with rabbit pAb to FABP7, RPCA-FABP7, dilution 1:1,000 in red. The blue is Hoechst staining of nuclear DNA. The FABP7 antibody stains developing astrocytes and radial glial cells.

Background:

Fatty Acid-Binding Proteins (FABPs) are a family of low-molecular-weight (14-15kDa) intracellular polypeptides that bind and solubilize long-chain fatty acids, thus controlling intracellular lipid dynamics (1,2). Ten members of the FABP family are expressed in humans, each with a specific cell and tissue expression pattern. The seventh member of the family is generally called FABP7 but is also known as brain lipid binding protein or BLBP. One group discovered a cDNA the corresponding mRNA for which was specifically expressed in the brain in large amounts only early in development and which was clearly related in amino acid sequence to other lipid binding proteins known at the time (2). FABP7 is abundantly expressed in neural stem cells, radial glia and astrocytes of the developing brain and the retina but is heavily down regulated in the adult. Different members of the FABP family bind different lipid ligands and FABP7 appears to bind with very high affinity a polyunsaturated fatty acid (PUFA), specifically the omega 3 lipid docosahexaenoic acid (DHA, 3). DHA is the major PUFA of the human brain the nutritional requirement for this PUFA parallels the expression profile of FABP7. FABP7 expression is regulated downstream of PAX6 and Notch signalling pathways and higher expression of FABP7 are associated with a worse prognosis in patients with glioblastoma multiforme (5). Genetic deletion of the *FABP7* gene is not lethal, but mice lacking the protein product have behavioral abnormalities including increased anxiety (6). FABP7 is expressed in both the nuclei and cytoplasm of cells in which it is expressed and some evidence suggests it may also be secreted, functioning as a developmentally important ligand important for neuronal migration along radial glia (2).

The RPCA-FABP7 antibody was made against full length recombinant human FABP7 expressed in and purified from *E. coli*. It is useful for studies neural stem cells, developing astrocytes and radial glia under normal and pathological conditions and neural cell progenitors in adult brain. We also supply a mouse monoclonal made against the same immunogen, MCA-2A84.

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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.