

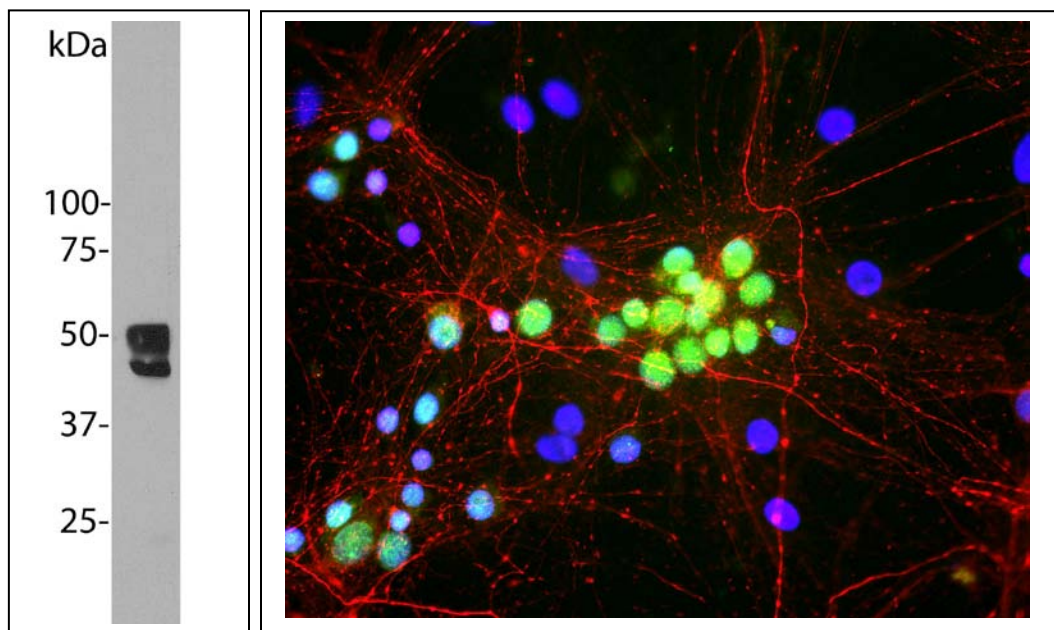
## Catalogue MCA-1G10: Monoclonal antibody to FOX1 (A2BP1)- RBFOX1

**The Immunogen:** Fox1 is one of a family of 3 mammalian Fox1 homologues. Fox1 was discovered in *C. elegans* as a gene involved in sex determination, and the name Fox is an acronym of "Feminizing locus on X" (1).

The *C. elegans* Fox1 protein and its 3 mammalian homologues are all ~46 kDa proteins and each includes a central highly conserved [RRM](#) type RNA recognition motif, which corresponds to a small ~70 amino acid structure consisting of 4 beta strands and two alpha-helices. This region is identical in all three mammalian Fox1 family proteins. An alternate name for Fox 1 is ataxin-2 binding protein 1 (A2BP1), since it was discovered in a yeast two hybrid screen using ataxin-2 as bait (2).

As with the other Fox proteins, it is assumed that Fox1/A2BP1 has a role in the RNA splicing in the nervous system (3). Fox3, a protein also known as [NeuN](#), is a widely used marker of neuronal nuclei and proximal cytoplasm (4, 5). Like Fox3, Fox1 is expressed in neuronal nuclei, but with a different pattern of expression than Fox3. For example, in the cerebellum, Fox3 does not stain Purkinje neurons and Golgi neurons, but these two neuron types are stained by Fox1 antibody (6).

Our antibody was raised against the N-terminal 100 amino acids of human Fox1 as expressed in and purified from *E. coli*. We did not use full length Fox1 as immunogen since the three mammalian Fox1 homologues, namely Fox1, Fox2 and Fox3, include virtually identical [RRM](#) motifs. The N-terminal region of the three molecules are much more variable in the three molecules so antibodies specific for each of the three molecules can therefore be generated. The [HGNC](#) name for this protein is [RBFOX1](#).



**Left:** Western blot of mouse brain homogenates stained with MCA-Fox1. Antibody binds closely spaced 48 kDa and 46 kDa bands. **Right:** Rat brain neural cultures stained with MCA-1G10 (green), EnCor's rabbit polyclonal antibody to NF-M [RPCA-NF-M](#) (red) and DNA (blue). The MCA-1G10 antibody reveals nuclear and distal cytoplasmic staining for Fox1, and the complete absence of staining of non-neuronal cells.

**Antibody Characteristics:** MCA-1G10 is a mouse IgG1 class antibody with a k light chain. MCA-1G10 is known to react with Fox1 from human, cow, mouse and rat. Since Fox1 is highly conserved, it is likely that the antibody is effective on other species also.

**Suggestions for use:** The antibody solution is affinity purified from tissue culture supernatant and is at a concentration of 1 mg/mL 100 µLs of phosphate buffered saline. The antibody solution can be used at dilutions of 1:500-1:1,000 in immunofluorescence experiments. In western blotting using chemiluminescence it can be used at dilutions of 1:1,000-2,000. Antibody preparation contains 10 mM sodium azide preservative (Link to <http://www.encorbio.com/MSDS/azide.htm> for Material Safety Data Sheet). Avoid repeated freezing and thawing, store at 4°C or -20°C.

**Omim link:** <http://omim.org/entry/605104>

**References:**

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2. Shibata H, Huynh DP, Pulst SM. A novel protein with RNA-binding motifs interacts with ataxin-2. [Hum Mol Genet. 39:1303-13 \(2000\).](#)
3. Underwood JG, Boutz PL, Dougherty JD, Stoilov P and Black DL. Homologues of the *Caenorhabditis elegans* Fox-1 protein are neuronal splicing regulators in mammals. [Mol. Cell. Biol. 25:10005-10016 \(2005\).](#)
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5. Kim KK, Adelstein RS, Kawamoto S. Identification of neuronal nuclei (NeuN) as Fox-3, a new member of the Fox-1 gene family of splicing factors. [J. Biol. Chem. 284:31052-31061 \(2009\).](#)
6. Kim KK, Kim YC, Adelstein RS, Kawamoto S. Fox-3 and PSF interact to activate neural cell-specific alternative splicing. [Nucleic Acids Res. 39:3064-78 \(2011\).](#)

**Limitations:** This product is for research use only and is not approved for use in humans or in clinical diagnosis.

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