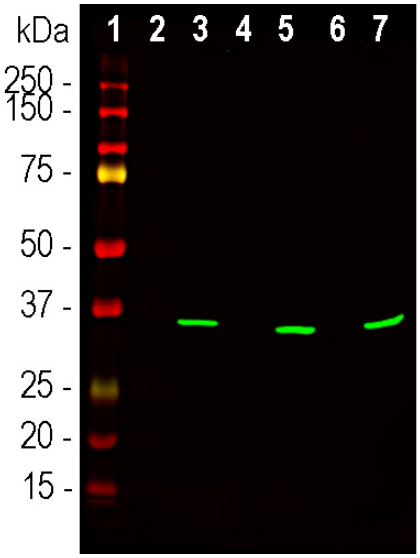
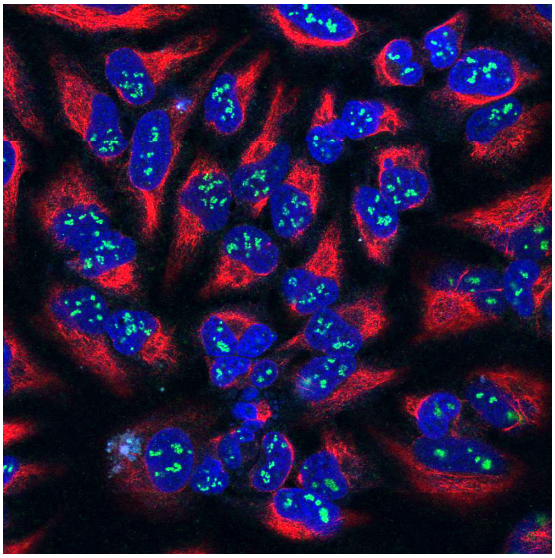
Fibrillarin Mouse Monoclonal Antibody

MCA-38F3

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Mouse	IgG1	35kDa	Hu, Rt, Ms, Dm, Ce, Sc



Western blot analysis of lysates of cell fractions probed with mouse mAb to fibrillarin, MCA-38F3, dilution 1:500 in green: [1] protein standard, [2] C6 cytosol, [3] C6 nuclear, [4] HEK293 cytosol, [5] HEK293 nuclear, [6] NIH-3T3 cytosol and [7] NIH-3T3 nuclear fractions. The band at 37kDa corresponds to the fibrillarin protein detected exclusively in the nuclear fractions.



High magnification confocal image of HeLa cells stained with mouse mAb to fibrillarin, MCA-38F3, dilution 1:100 in green, and costained with chicken pAb to Vimentinm, CPCA-Vim, in red, 1:10,000. Nuclear DNA is revealed with the Hoechst stain in blue. The fibrillarin antibody shows strong staining of nucleoli in the nucleus, while the vimentin antibody reveals cytoplasmic intermediate filaments.

Background:

Fibrillarin is a highly conserved component of a nucleolar small ribonucleoprotein complex in mammals, involved in the processing of ribosomal RNA during ribosomal biogenesis. The protein runs at ~35kDa on SDS-PAGE and is very rich in basic amino acids having a PI of 9.8. An alternate name for the protein is "U3 small nuclear ribonucleoprotein" (U3snRNP). Fibrillarin was originally identified in humans since autoantibodies staining nucleoli were seen in some patients with the autoimmune disease scleroderma (1). Subsequently the protein fibrillarin was found to be the human homologue of Nop1p, a *Saccharomyces cerevisiae* nucleolar protein, the two proteins being 67% identical (2,3). The MCA-38F3 antibody was made against a nuclear preparation from *S. cerevisiae* and found to bind the yeast protein Nop1p, and was then found to also bind human fibrillarin (2). The fibrillarin molecule consists of an N-terminal glycine and arginine rich region followed by a highly conserved globular domain. Embryonic knockout of the fibrillarin gene in mice is lethal, suggesting fundamental importance of this protein (4). Autoantibodies to fibrillarin are also seen in patients with the autoimmune disease systemic sclerocis (5).

The MCA-38F3 antibody has been widely used as a convenient marker of nucleoli in many different species including human, rat, mouse, zebrafish, *C. elegans*, *D. melanogaster*, yeast and many others. We recently mapped the epitope of MCA-38F3 to EYRAWNPFRSKLAAAILGGV, amino acids 133-152 of the human sequence, at the N-terminal of the globular domain, see here. The KD for this antibody in 4.578 X 10^{-9}M. While MCA-38F3 works well as a immunocytochemical marker it gives a relatively weak but still usable western blotting signal on mammalian cell extracts. We recommend other antibodies for western blotting of mammalian tissues such as our mouse monoclonal MCA-4A4, or rabbit and chicken polyclonals, RPCA-Fib and CPCA-Fib. All three were made against recombinant full length human fibrillarin.

Ordering Information
Web *www.encorbio.com*
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Phone *352-372-7022*
Fax *352-372-7066*

HGNC Name: *FBL*
UniProt: *P15646*
RRID: *AB_2278545*
Immunogen: *Yeast nuclear preparation*
Format: *Concentrated hybridoma cell culture media plus 5mM NaN_3*
Storage: *Store at 4°C for short term, for longer term at -20°C. Avoid freeze/thaw cycles.*
Recommended dilutions:
WB: 1:100-500. ICC/IF and IHC: 1:100-500

References:

1. Aris JP and Blobel G. Identification and characterization of a yeast nucleolar protein that is similar to a rat liver nucleolar protein. J. Cell Biol. 107:17-31 (1988).
2. Aris JP and Blobel G. cDNA cloning and sequencing of human fibrillarin, a conserved nucleolar protein recognized by autoimmune antisera. Proc. Natl. Acad. Sci. 88:931-5 (1991).
3. Ochs RL, Lischwe MA, Spohn WH, Busch H. Fibrillarin: a new protein of the nucleolus identified by autoimmune sera. Biol. Cell. 54:123-33 (1985).
4. Newton K, Petfalski E, Tollervey D, Caceres JF. Fibrillarin is essential for early development and required for accumulation of an intron-encoded small nucleolar RNA in the mouse. Mol. Cell Biol. 23:8519-27 (2003).
5. Okano Y, Steen VD, Medsger TA. Autoantibody to U3 nucleolar ribonucleoprotein (fibrillarin) in patients with systemic sclerosis. Arth. Rheum. 35:95-100 (1992).

This antibody has been widely used for many years sold through EnCor and through numerous OEM partners- to find such references go to Google Scholar and enter "38F3 AND antibody AND fibrillarin" or go here.

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.