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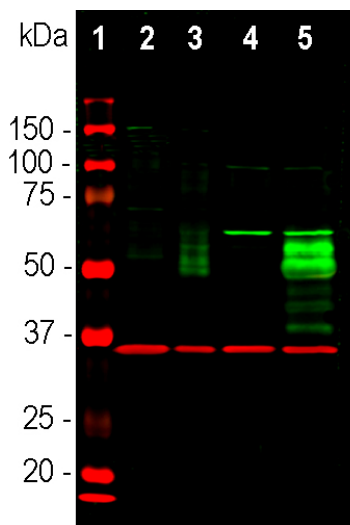
**HGNC Name:** FOS  
**UniProt:** P01100  
**RRID:** AB\_2572236  
**Immunogen:** Full length recombinant human protein expressed in and purified from *E. coli*.  
**Format:** Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>  
**Storage:** Store at 4°C for short term, for longer term at -20°C  
**Recommended dilutions:**  
 WB: 1:2,000 IF/ICC: 1:2,000 IHC: 1:5,000-10,000

### References:

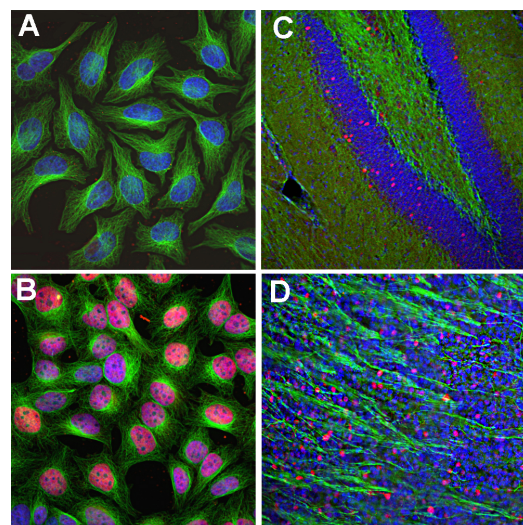
1. Mildle-Langosch K. The Fos family of transcription factors and their role in tumorigenesis. *Eur. J. Cancer* 41:2449-2461 (2005).
2. Chiu R, et al. The c-Fos protein interacts with c-Jun/AP-1 to stimulate transcription of AP-1 responsive genes. *Cell* 54:541-52 (1988).
3. Karin M. The regulation of AP-1 activity by mitogen activated protein kinases. *J Biol Chem* 270:16483-6 (1995).
4. Bossis G, et al. Down-regulation of c-Fos/c-Jun AP-1 dimer activity by sumoylation. *Mol Cell Biol* 25(16):6964-79 (2005).
5. Dragunow M, Faull R. The use of c-fos as a metabolic marker in neuronal pathway tracing. *J. Neurosci. Mets.* 29:261-265 (1989).

This is a new antibody but peer reviewed publications using it are beginning to come on line. So if you perform a Google Scholar search for "MCA-2H2" several publications will appear, or you can just select [here](#).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Rabbit		50-65kDa by SDS-PAGE	Hu, Rt, Ms



Western blot analysis of cell lysates using rabbit pAb to c-FOS, RPCA-c-FOS, dilution 1:2,000, in green, and mouse mAb to GAPDH, MCA-1D4, dilution 1:5,000, in red, used as a loading control. [1] protein standard (red), [2] HeLa cells grown in FBS free media, [3] HeLa cells stimulated with 20% FBS for 2 hours after being in FBS free media for 36 hours, [4] rat cortical neurons, [5] rat cortical neurons treated with membrane depolarization buffer for 5 hours. Multiple bands at 50-65 kDa in stimulated or treated cell lysates, correspond to different isoforms of the c-FOS protein.



Immunofluorescent analysis of HeLa cells stained with rabbit pAb to c-FOS, RPCA-c-FOS, dilution 1:2,000 in red, and mouse mAb to tubulin, MCA-1B12, dilution 1:10,000, in green. The blue is DAPI staining of nuclear DNA. HeLa cells were kept in fetal bovine serum (FBS) - free media for 36 hours. Then the cells were treated with PBS (A), as a control, or stimulated with 20% FBS (B) for 30 min. c-FOS antibody labels only the nuclei of stimulated cells. Mouse hippocampus (C) or olfactory bulb sections (D) stained with RPCA-c-FOS, dilution 1:10,000 in red, and mouse mAb to NF-L, MCA-7D1, dilution 1:5,000, in green. The blue is Hoechst staining of nuclear DNA. Following transcardial perfusion of mouse with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45µm, and free-floating sections were stained with above antibodies. The c-FOS antibody stains only nuclei of spontaneously active neurons. NF-L is expressed in axons of neuronal cells.

### Background:

The FOS gene and protein were originally identified as the transforming element in a viral oncogene. The transforming protein was named v-FOS, for viral FOS, and the normal cellular non-transforming proto-oncogene was called c-FOS, for cellular FOS. FOS is an acronym for "FBJ murine osteogenic sarcoma", the virus in which the gene product was first discovered. The c-FOS protein is a normal gene acting as an on/off switch controlling the expression of many other genes. The v-FOS form is mutated to stay in the on position, this persistently activating other genes and promoting unregulated cell division. The unmutated c-FOS is an "immediate-early" gene, so-called because protein expression is usually very low but increases rapidly and transiently in response to a wide array of stimuli including serum, growth factors, tumor promoters, cytokines, and UV radiation. Newly expressed c-FOS protein associates with JUN family and other basic leucine-zipper (bZIP) proteins to create a variety of activator protein-1 (AP-1) complexes (1). AP-1 complexes specifically activate the expression of many other genes and so regulate cellular responses to stimuli which may result in cell proliferation, differentiation, neoplastic transformation, apoptosis, and response to stress (2). The regulated expression of c-FOS therefore plays an important role in many cellular functions. Site specific phosphorylation activates c-FOS, while sumoylation of c-FOS inhibits the AP-1 transcriptional activity (3,4). Since c-FOS expression is induced in neurons which are rapidly firing action potentials, appropriate c-Fos antibodies can be used to identify activated neurons in tissues (5). Using current techniques it is possible to follow processes of such cells or obtain data on their mRNA expression.

The RPCA-c-FOS antibody was made against recombinant full length human c-FOS expressed in and purified from *E. coli*. It can be used to identify activated cells in cell culture and in formalin fixed floating and paraffin embedded sections and to follow c-FOS expression in western blots of cell and tissue homogenates. The same immunogen was used to generate a mouse monoclonal antibody to c-FOS, MCA-2H2, an antibody with similar properties.

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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.**

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