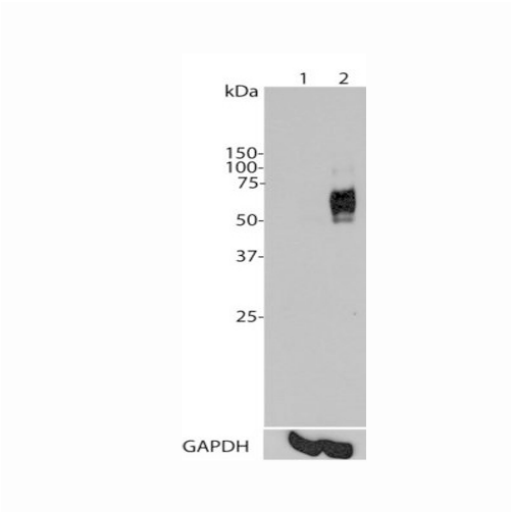
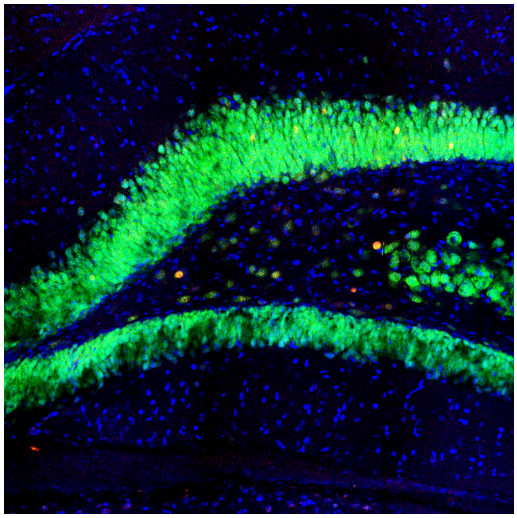
# c-FOS, mouse mAb MCA-2H2

| Applications | Host | Isotype | Molecular Wt. | Species Cross-Reactivity |
|---|---|---|---|---|
| **WB, IF/ICC, IHC** | **Mouse** | **IgG1** | **50-65kDa by SDS-PAGE** | **Hu, Rt, Ms** |




*Top Panel: Western blot analysis of c-FOS expression in HeLa cells using MCA-2H2. Lane 1: HeLa cells were serum-starved for 36 hours. Lane 2: Serum starved HeLa cells were stimulated with 20% fetal bovine serum (FBS) for 2 hours. MCA-2H2 recognizes bands in the range of 50-65 kDa, representing multiple isoforms of c-FOS, but only in the stimulated cells. Serum starvation attenuates c-FOS expression, while 20% FBS strongly stimulates c-FOS expression. Bottom panel: Blot was stripped and probed with our monoclonal antibody against GAPDH, MCA-1D4, used as loading control.*



*Section of rat hippocampus stained with mouse monoclonal antibody to c-FOS MCA-2H2 in red and counterstained with rabbit polyclonal antibody to FOX3/NeuN RPCA-Fox3. DAPI reveals nuclei of neurons and glia in blue. The hippocampal neurons stain green for FOX3/NeuN and a few also are expressing c-FOS, and so appear orange. These cells were spontaneously active at the time the animal was sacrificed.*

**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 acrynym for FBJ murine osteogenic sarcoma, the virus in which the gene product was first discovered. 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).


**Ordering Information**
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**HGNC name:** FOS
**RRID:** AB_2571561
**Immunogen:** Full length recombinant human protein expressed in and purified from *E. coli*.
**Format:** Purified antibody at 1mg/mL in 50% PBS, 50% glycerol 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: 1:1,000-2,000.
IF/ICC or IHC: 1:1,000.

**References:**


1. Mildle-Langosch K. The Fos family of transcription factors and their role in tumourigenesis. 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).



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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 **Bo**—Cow **Po**—Pig **Ho**—Horse **Ch**—Chicken **Dr**—*D. rerio* **Dm**—*D. melanogaster* **Ce**—*C. elegans* **Sc**—*S. cerevisiae* **Sa**—*S. aureus* **Ec**—*E. coli.*