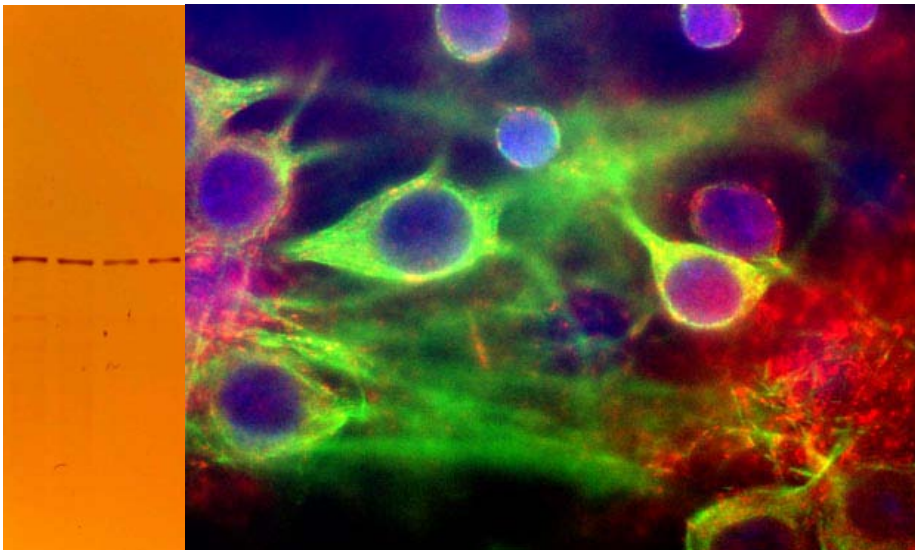


Catalogue RPCA-MARCKS: Polyclonal Antibody to MARCKS (Myristoylated alanine rich C Kinase substrate)

The Immunogen: Myristoylated alanine rich C-kinase substrate, hence MARCKS, was originally discovered by as a major substrate for protein kinase C in the brain and other tissues, and was originally isolated from human epithelial cells (1). The MARCKS protein runs at about 80 kDa on SDS-PAGE gels, although the real molecular is much lower, at about 31.5 kDa. The reason for this is probably because the protein is extremely rich in acidic residues. Such proteins bind less SDS than the average protein, and so migrate in PAGE more slowly than the normal protein. MARCKS is a major protein of brain, and is concentrated in synapses of neurons. It appears to function in synaptic vesicle cycling and has been shown to bind both actin and calmodulin *in vitro* (2). MARCKS belongs to a family of proteins with similar actin and calmodulin binding properties (3). Deletion of the MARCKS gene in mice results in embryonic brain defects and death (4).



Left: Western blot of whole rat cortex, cerebellum, brain stem and spinal cord homogenate stained with RPCA-MARCKS, at dilution of 1:10,000. A prominent band running with an apparent SDS-PAGE molecular weight of ~80 kDa corresponds to MARCKS. **Right:** High Magnification view of mixed neuron/glia cultures stained with our MARCKS antibody (red) and [CPCA-MAP2](#), EnCor's antibody to MAP2 made in chicken. Blue is DNA stain. Note that the MARCKS antibody stains vesicular structures both in the glial cells and in the dendrites of the neurons, which are stained with the MAP2 antibody.

Antibody Characteristics: Our antibody was made against full length recombinant MARCKS expressed in and purified from *E. coli*. Store at 4°C or -20°C. Avoid repeat freezing and thawing. Antibody is provided in the form of crude serum.

Suggestions for use: Try at dilutions of 1:500 to 1:1,000 for immunofluorescence, and 1:5,000 for ABC or other enzyme linked immunocytochemical procedures. For western blots try at 1:20,000.

References:

1. Hirai, M. and Shimizu N. Purification of two distinct proteins of approximate Mr 80,000 from human epithelial cells and identification as proper substrates for protein kinase C. [Biochem J. 270:583-9 \(1990\).](#)
2. Hartwig JH, Thelen M, Rosen A, Janmey PA, Nairn AC and Aderem A. MARCKS is an actin filament crosslinking protein regulated by protein kinase C and calcium-calmodulin. [Nature 356: 618-622 \(1992\)](#)

3. Blackshear PJ. The MARCKS family of cellular protein kinase C substrates. [J. Biol. Chem. 268: 1501-1504 \(1993\).](#)

4. Stumpo DJ, Bock CB, Tuttle JS and Blackshear PJ. MARCKS deficiency in mice leads to abnormal brain development and perinatal death. [Proc. Nat. Acad. Sci. 92: 944-948 \(1995\)](#)

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

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