Calretinin Rabit Polyclonal Antibody

**Applications**

| WB | IF/ICC, IHC |

**Host**

Rabbit

**Isotype**

IgG

**Molecular Wt.**

29kDa

**Species Cross-Reactivity**

Hu, Rt, Ms

**Recommended dilutions:**

- WB: 1:5,000-10,000
- IF/ICC or IHC: 1:5,000-1:10,000

**Storage:**

Stable at 4°C for one year, for longer term storage at -20°C. Minimize freeze/thaw cycles for long term storage.

**Immunofluorescent analysis of rat cerebellum section stained with rabbit pAb to calretinin, RPCA-Calret, dilution 1:5,000 in red, and stained with mouse mAb to calbindin, MCA-4H7, 1:1,000 in green. Following transcerebral perfusion of rat with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45μM, and free-floating sections were stained with the above antibodies. The calretinin antibody stains interneurons predominantly in the molecular layer, while the calbindin antibody strongly labels the dendrites and perikarya of Purkinje cells in the molecular layer of the cerebellum.**

**Background:**

Calretinin, as the name suggests, was originally isolated in the retina but was found to be also expressed in mammalian central nervous system, testis, fallopian tube and pancreas (1). It is a cytosolic Calcium binding protein which includes typical "EF hand" structures the prototype for which is the protein parvalbumin (2-4). In the brain calretinin it is localized in certain classes of neurons, and antibodies to it are useful for identifying specific neuronal cell types (1). It is particularly concentrated in some cerebellar granular cells and their parallel fibres, but is also found in many GABAergic interneurons in the cortex. These GABAergic interneurons in most cases express only one of three related Calcium binding proteins, namely calretinin, calbindin or parvalbumin (5,6). As a result these important inhibitory interneurons can be identified and classified based on their content of these three proteins. Each type of neuron as defined in this fashion has distinct electrophysiological and functional properties (7). Calretinin deficiency in the mossy cells of the mouse dentate gyrus and granule cells results in abnormal excitability in the cerebellar neuronal network and impairment of long-term potentiation and motor coordination, suggesting that calretinin functions as a general Calcium buffer (8).

The rabbit polyclonal antibody to Calretinin, RPCA-Calret, was made against full length recombinant human calretinin expressed in and purified from E. coli. The calretinin protein is related in amino acid sequence to calbindin and to a lesser extent parvalbumin, so, for studies of GABAergic interneurons, it is important to verify that antibodies developed against one protein do not cross react with either of the others, which we have done for MCA-3G9 using appropriate recombinant human proteins. We manufacture mouse monoclonal antibodies to calretinin MCA-3G9 and MCA-6A9, and a chicken polyclonal CPCC-Calret. We also supply a variety of other mouse, rabbit and chicken antibodies to calbindin (MCA-5A9 and CPCC-Calb) and parvalbumin (MCA-3C9 and CPCC-Pvalb), allowing double and triple labeling of appropriate cell and tissue samples.