



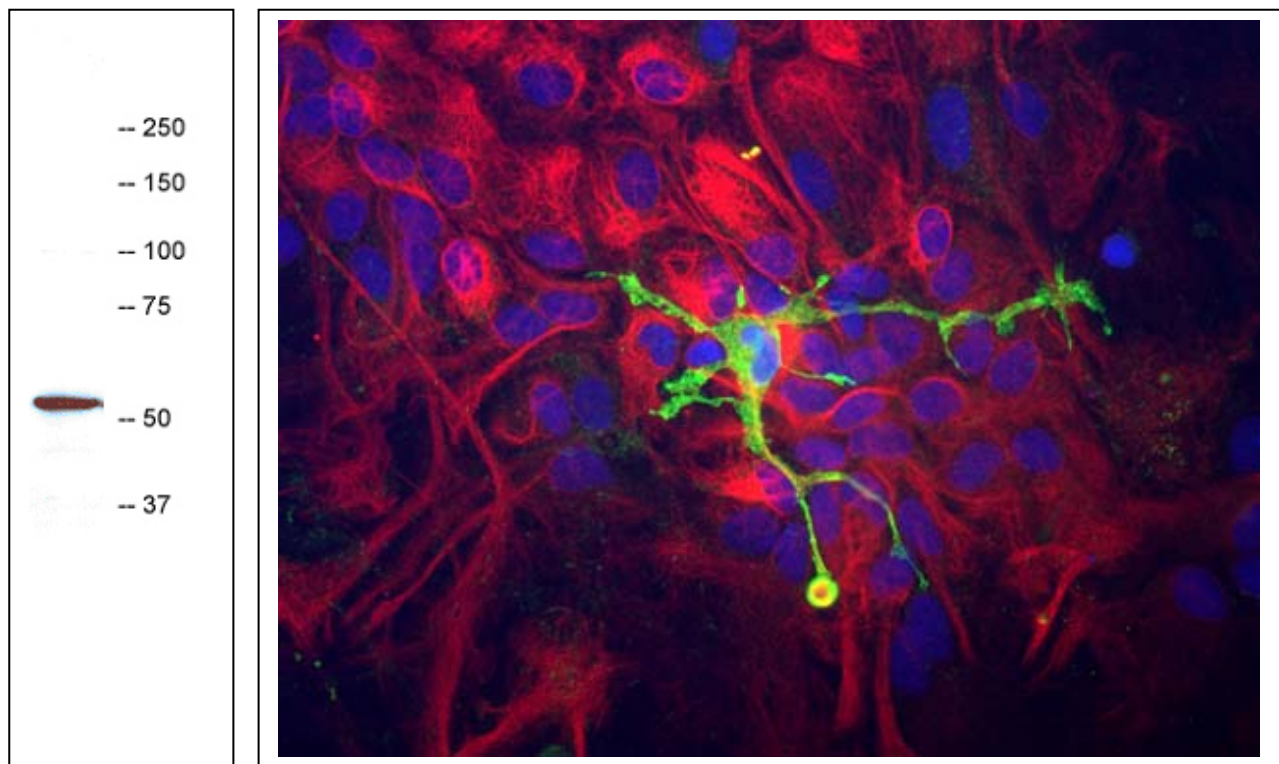
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Catalogue RPCA-Cor1a: Rabbit Polyclonal Antibody to Coronin 1a/p57/Coronin 1/Clapbp/clipinA/TACO

The Immunogen: Coronin was originally discovered in *Dictyostelium*, where it was found to be involved in the chemotactic response of these amoeboid cells (1,2). The name derives from the fact that the protein is localized at the leading edge or crown of these highly motile cells. The name derives from Corona, which is Latin for crown. Coronin homologues have been found in yeast, *C. elegans*, *Drosophila* and many other species, and a family them are known in mammals. All coronins belong to the WD40 or WD family of proteins, the prototype of which is the beta subunit of trimeric G-proteins. The beta subunit proteins all have a beautiful conserved wheel-like seven bladed beta-propeller structure, with each blade being formed by four beta strands generated by one of the WD sequence repeats. The G protein beta subunits are believed to function as general purpose binding adapters, mediating numerous regulatory binding interactions between G proteins, G protein coupled receptors and G protein effectors. Although sequence analysis suggested that coronin 1a only possess 5 of the these WD repeats, recent structural studies show that, like the G protein beta-subunits, there are seven beta-propellers, generating a compact 7 bladed propeller (3). Coronins appear to be particularly involved in binding to actin, actin associated proteins, tubulin and phospholipase C and have been implicated in the mechanisms of chemotaxis and phagocytosis. In mammals there are at least five major coronin proteins, named coronins 1 to 5 in one nomenclature. Another nomenclature divides these five proteins in coronins 1a and 1b, 2a, 2b and 2c (see the HUGO (Human Genome Organization) Gene Nomenclature Committee link for this family [here](#)). The various coronin proteins have several other alternate names, since they were discovered independently by several different groups. The mammalian coronin family members are abundant components of eukaryotic cells, and each type has a restricted cell type specific expression pattern. Coronin 1A is the mammalian coronin most similar in protein sequence to the *Dictyostelium* protein and is found exclusively in hematopoietic lineage cells such as lymphocytes, macrophages and neutrophils. RPCA-Cor1a is therefore an excellent marker of cells of this lineage and can also be used to study the leading edges particularly of neutrophils. Since the only hematopoietic cells found within the central nervous system are microglia, this antibody is also an excellent marker of this important cell type. Microglia are numerically fairly minor components of the nervous system, but microglial activation is seen in response to a wide variety of damage and disease states, including ALS, Alzheimer's disease and responses to brain tumors. Since coronin 1a is a constitutive component of microglia, the coronin 1a antibody can be used to study both quiescent and activated microglia (see next page).

Blots and Immunocytochemistry (see next page) Left: Western blot of HL60 Cell extract stained with RPCA-Cor1a, at dilution of 1:10,000. A prominent band running with an apparent SDS-PAGE molecular weight of ~57 kDa corresponds to Coronin 1a. Numbers represent positions of molecular weight standards in kDa. **Right:** Immunocytochemistry of a mixed neuron/glia culture from newborn rat brain stained with RPCA-Cor1a (green) and [CPCA-Vim](#) (our antibody to vimentin made in chicken). Blue is nuclear counter stain. Glial cells and fibroblasts stain with vimentin, while microglia alone stain strongly and specifically for Coronin 1a, which can therefore be used as a robust marker of this important cell type.

Antibody Characteristics: Our antibody was made against full length recombinant Coronin 1a expressed in and purified from *E. coli*. Store at 4°C or -20°C. Avoid repeat freezing and thawing.



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. de Hostos, E. The coronin family of actin-associated proteins. [Trends in Cell Biology 9:345-350 \(1999\)](#).
2. Rybakin, V. and Clemen, C. S. Coronin proteins as multifunctional regulators of the cytoskeleton and membrane trafficking. [BioEssays. 27:625-632 \(2005\)](#).
3. Appleton, B. A., Wu, P and Weisman, C. The crystal structure of murine coronin-1: a regulator of actin cytoskeletal dynamics in lymphocytes. [Structure 14:87-96 \(2006\)](#).

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

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