

Publication

Association of the leukocyte plasma membrane with the actin cytoskeleton through coiled coil-mediated trimeric coronin 1 molecules

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 156433**Author(s)** Gatfield, J.; Albrecht, I.; Zanolari, B.; Steinmetz, M. O.; Pieters, J.**Author(s) at UniBasel** [Pieters, Jean](#) ;**Year** 2005**Title** Association of the leukocyte plasma membrane with the actin cytoskeleton through coiled coil-mediated trimeric coronin 1 molecules**Journal** Molecular Biology of the Cell**Volume** 16**Number** 6**Pages / Article-Number** 2786-98**Keywords** Actins/*metabolism; Amino Acid Sequence; Animals; Cell Line; Cell Membrane/*metabolism; Circular Dichroism; Cytoskeleton/*metabolism; Electrophoresis; Gel; Two-Dimensional; Humans; Immunohistochemistry; Introns; Jurkat Cells; Leukocytes/*cytology; Macrophages/cytology; Mice; Microfilament Proteins/chemistry/genetics/isolation & purification/*metabolism/ultrastructure; Models; Biological; Molecular Sequence Data; Protein Isoforms/chemistry/genetics/metabolism; Protein Structure; Secondary; Tertiary; Sequence Analysis; Protein; Sequence Homology; Amino Acid; Spectrophotometry; Ultraviolet; Subcellular Fractions/metabolism

Coronin 1 is a member of the coronin protein family specifically expressed in leukocytes and accumulates at sites of rearrangements of the F-actin cytoskeleton. Here, we describe that coronin 1 molecules are coiled coil-mediated homotrimeric complexes, which associate with the plasma membrane and with the cytoskeleton via two distinct domains. Association with the cytoskeleton was mediated by trimerization of a stretch of positively charged residues within a linker region between the N-terminal, WD repeat-containing domain and the C-terminal coiled coil. In contrast, neither the coiled coil nor the positively charged residues within the linker domain were required for plasma membrane binding, suggesting that the N-terminal, WD repeat-containing domain mediates membrane interaction. The capacity of coronin 1 to link the leukocyte cytoskeleton to the plasma membrane may serve to integrate outside-inside signaling with modulation of the cytoskeleton.

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