

## Product Information

### Anti-Centrin

produced in rabbit, affinity isolated antibody

Catalog Number **C7736**

Synonyms: Anti-Caltractin; Anti-CETN

### Product Description

Anti-Centrin is produced in rabbit using as immunogen a synthetic peptide corresponding to the C-terminus of human centrin 1, amino acids 157-172 with N-terminally added lysine, conjugated to KLH. This sequence is highly conserved in centrin 1 of many species, e.g. mouse, drosophila, and *Xenopus*. It is also found in human and mouse centrin 2, but is not found in centrin 3. Anti-Centrin is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Centrin recognizes human centrin 1 by immunoblotting (~ 21 kDa). Staining of centrin 1 is specifically inhibited with the immunizing peptide.

The centrosome, the major microtubule-organizing center (MTOC) in the animal cell, is a key determinant in the organization of the cytoplasm, in the determination of cell polarity, and in the establishment of mitotic spindle poles during the cell cycle.<sup>1,2</sup> Centrosomes consist of a closely-associated pair of centrioles and a pericentriolar matrix that surrounds and connects the individual centrioles to one another and to the microtubules. Centrin is a member of the calcium-binding E-F hand protein superfamily present in the centrosome pericentriolar matrix.<sup>3-5</sup> Several other proteins have been identified in the pericentriole as well, including  $\gamma$ -tubulin, Arp1 $\alpha$ /centractin, and pericentrin. The centrin family consists of at least ten isoforms, suggesting that it may be subjected to multiple regulations.<sup>6</sup> Three separate centrin genes have been identified in human cells: centrin 1, 2, and 3.<sup>4-7</sup> Centrin 1 shows strong amino acid homology to centrin 2 (85%), but lower homology to centrin 3 (54%) and CDC31 (50%) from the yeast *S. cerevisiae*.

Centrin has a fundamental role in the MTOC structure and function. Phenotypic analysis of mutants in *Chlamydomonas caltractin* and the yeast *CDC31* genes have indicated that the protein is required for proper

duplication and segregation of the MTOC in the respective cells.<sup>8,9</sup> In HeLa cells, centrin is localized at the centrosome of interphase cells. During mitosis, it redistributes to the region of the spindle poles. In human cells, most of the centrin (> 90%) is not associated with the centrosome. The centrosome-associated centrin is concentrated within the distal lumen of the centrioles and within the precursor structures of centrioles/basal bodies.<sup>6,10</sup>

Injection of recombinant centrin into a two-cell stage frog embryo delays cleavage and promotes the formation of abnormal blastomeres in which the distribution of centrosomes and nuclei is impaired.

Centrin is phosphorylated during the G2/M phase of the cell cycle, specifically during prophase and metaphase but not at interphase of the cell division cycle, suggesting that centrin phosphorylation may signal the separation of the centrosomes at prophase.<sup>11</sup>

### Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

Antibody concentration: 0.5-0.8 mg/ml

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

### Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing, or storage in frost-free freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

### Product Profile

Immunoblotting: a minimum working dilution of 1:2,000 is recommended using 293-T exp.Hu.Centrin-1LY117608 or 293-T exp.Hu.Centrin1-FLAG LY401316

**Note:** In order to obtain the best results using different techniques and preparations, we recommend determining the optimal working dilutions by titration.

### References

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