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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

Anti-Kinetochore protein NDC80 homolog [Hec1 (9G3)] Ab03500-10.0-BT

This chimeric human antibody was made using the variable domain sequences of the original Mouse IgG1 format for improved compatibility with existing reagents assays and techniques.

Isotype and Format: Human IgG1, Kappa

Clone Number: Hec1 (9G3)

Alternative Name(s) of Target: NDC80; HEC; HEC1; KNTC2; Highly expressed in cancer protein; Kinetochore protein Hec1; HsHec1; Kinetochore-associated protein 2; Retinoblastoma-associated protein HEC

UniProt Accession Number of Target Protein: O14777

Published Application(s): IP, WB, IF

Published Species Reactivity: Human

Immunogen: The original antibody was generated in mice by immunization with a purified protein fragment encompassing amino acids 56–632 of the human Hec1 protein.

Specificity: This antibody specifically binds amino acids 200–215 in the N terminal globular domain of the human Hec1 protein, exterior to Spc24 at metaphase kinetochores. It binds in a region which resides within the well-ordered calponin homology domain of the protein. Hec 1 protein acts as a component of the essential kinetochore-associated NDC80 complex, which is required for chromosome segregation and spindle checkpoint activity. HEC protein is expressed most abundantly in the S and M phases of rapidly dividing cells but not in terminal differentiated cells. It localizes to the nuclei of interphase cells, and a portion distributes to centromeres during M phase. Inactivation of HEC by microinjection of specific monoclonal antibodies into cells during interphase severely disturbs the subsequent mitoses.

Application Notes: This antibody is widely used in studies involving the role of Hec1 protein in mitosis. This antibody can immunoprecipitate human Hec1 protein from nuclear, cytoplasmic, membrane and other components of T24 human bladder carcinoma cells. This antibody was capable of recognizing a 76-KDa protein in western blot. It was reported that when T24 human bladder carcinoma cells were synchronized in S phase and microinjected with this antibody the cells contained multiple, fragmented nuclei (PMID: 9315664). Preincubation of the antibody with C-2 peptide (comprising amino acids 200-215 of Hec1) prevented the antibody from recognizing kinetochores in immunofluorescence assays. Immunofluorescent staining of HeLa and PtK1 cells in metaphase with 9G3 and another anti-Spc24 antibody revealed that the N

terminus of Hec1 was always exterior to Spc24 at kinetochores of bi-oriented chromosomes. It was further reported that PtK1 cells injected with this antibody exhibited mitotic defects (PMID: 17129782). A recombinantly generated version of this antibody rMAb-Hec1 robustly recognized kinetochores however, the original antibody exhibited more spindle staining and overall background staining when compared to the recombinant version (PMID: 34970967).

Antibody First Published in: Chen et al. HEC, a novel nuclear protein rich in leucine heptad repeats specifically involved in mitosis. Mol Cell Biol. 1997 Oct; 17(10): 6049-6056. [PMID:9315664](#)

Note on publication: Describes the use of this antibody to study the importance of Hec1 protein in mitosis.

Product Form

Size: 1 mg Purified antibody in bulk size.

Purification: Protein A affinity purified

Supplied In: PBS only.

Storage Recommendation: Store at 4°C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommended this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20°C.

Concentration: 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.