

**NEK2 Antibody (Center) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP8074c****Specification**

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**NEK2 Antibody (Center) Blocking Peptide - Product Information**

Primary Accession [P51955](#)  
Other Accession [NEK2\\_HUMAN](#)

**NEK2 Antibody (Center) Blocking Peptide - Additional Information**

**Gene ID** 4751

**Other Names**

Serine/threonine-protein kinase Nek2, HSPK 21, Never in mitosis A-related kinase 2, NimA-related protein kinase 2, NimA-like protein kinase 1, NEK2, NEK2A, NLK1

**Target/Specificity**

The synthetic peptide sequence is selected from aa 410~428 of human NEK2.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**NEK2 Antibody (Center) Blocking Peptide - Protein Information**

**Name** NEK2

**Synonyms** NEK2A, NLK1

**Function**

Protein kinase which is involved in the control of centrosome separation and bipolar spindle formation in mitotic cells and chromatin condensation in meiotic cells. Regulates centrosome separation (essential for the formation of bipolar spindles and high-fidelity chromosome separation) by phosphorylating centrosomal proteins such as CROCC, CEP250 and NINL, resulting in their displacement from the centrosomes. Regulates kinetochore microtubule attachment stability in mitosis via phosphorylation of NDC80. Involved in regulation of mitotic checkpoint protein complex via phosphorylation of CDC20 and MAD2L1. Plays an active role in chromatin condensation during the first meiotic division through phosphorylation of HMGA2. Phosphorylates: PPP1CC; SGO1; NECAB3 and NPM1. Essential for localization of MAD2L1 to kinetochore and MAPK1 and NPM1 to the centrosome. Phosphorylates CEP68 and CNTLN directly or indirectly (PubMed:<a href="http://www.uniprot.org/citations/24554434" target="\_blank">24554434</a>).

NEK2-mediated phosphorylation of CEP68 promotes CEP68 dissociation from the centrosome and its degradation at the onset of mitosis (PubMed:<a href="http://www.uniprot.org/citations/25704143" target="\_blank">25704143</a>). Involved in the regulation of centrosome disjunction (PubMed:<a href="http://www.uniprot.org/citations/26220856" target="\_blank">26220856</a>). Phosphorylates CCDC102B either directly or indirectly which causes CCDC102B to dissociate from the centrosome and allows for centrosome separation (PubMed:<a href="http://www.uniprot.org/citations/30404835" target="\_blank">30404835</a>).

#### **Cellular Location**

[Isoform 1]: Nucleus, nucleolus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle pole Chromosome, centromere, kinetochore. Chromosome, centromere. Note=STK3/MST2 and SAV1 are required for its targeting to the centrosome. Colocalizes with SGO1 and MAD1L1 at the kinetochore Not associated with kinetochore in the interphase but becomes associated with it upon the breakdown of the nuclear envelope. Has a nucleolar targeting/ retention activity via a coiled-coil domain at the C-terminal end [Isoform 4]: Nucleus, Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Predominantly nuclear

#### **Tissue Location**

Isoform 1 and isoform 2 are expressed in peripheral blood T-cells and a wide variety of transformed cell types. Isoform 1 and isoform 4 are expressed in the testis. Up-regulated in various cancer cell lines, as well as primary breast tumors

### **NEK2 Antibody (Center) Blocking Peptide - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

### **NEK2 Antibody (Center) Blocking Peptide - Images**

### **NEK2 Antibody (Center) Blocking Peptide - Background**

Protein kinases are enzymes that transfer a phosphate group from a phosphate donor, generally the  $\gamma$  phosphate of ATP, onto an acceptor amino acid in a substrate protein. By this basic mechanism, protein kinases mediate most of the signal transduction in eukaryotic cells, regulating cellular metabolism, transcription, cell cycle progression, cytoskeletal rearrangement and cell movement, apoptosis, and differentiation. With more than 500 gene products, the protein kinase family is one of the largest families of proteins in eukaryotes. The family has been classified in 8 major groups based on sequence comparison of their tyrosine (PTK) or serine/threonine (STK) kinase catalytic domains. The STE group (homologs of yeast Sterile 7, 11, 20 kinases) consists of 50 kinases related to the mitogen-activated protein kinase (MAPK) cascade families (Ste7/MAP2K, Ste11/MAP3K, and Ste20/MAP4K). MAP kinase cascades, consisting of a MAPK and one or more upstream regulatory kinases (MAPKKs) have been best characterized in the yeast pheromone response pathway. Pheromones bind to Ste cell surface receptors and activate yeast MAPK pathway.

### **NEK2 Antibody (Center) Blocking Peptide - References**

Chen, Y., et al., J. Biol. Chem. 277(51):49408-49416 (2002). Eto, M., et al., J. Biol. Chem. 277(46):44013-44020 (2002). Schutte, B.C., et al., Genome Res. 10(1):81-94 (2000). Fry, A.M., et al., EMBO J. 17(2):470-481 (1998). Schultz, S.J., et al., Cell Growth Differ. 5(6):625-635 (1994).