

NEK2 Antibody (Center) Blocking Peptide
Synthetic peptide
Catalog # BP8073c**Specification**

NEK2 Antibody (Center) Blocking Peptide - Product Information

Primary Accession [P51955](#)
Other Accession [Q96QN9](#)

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 used to generate the antibody [AP8073c](/product/products/AP8073c) was selected from the Center region of human NEK2. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

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:24554434). NEK2-mediated phosphorylation of CEP68 promotes CEP68 dissociation from the centrosome and its degradation at the onset of mitosis (PubMed:25704143). Involved in the regulation of centrosome disjunction (PubMed:26220856). Phosphorylates CCDC102B either directly or indirectly which causes CCDC102B to dissociate from the centrosome and allows for centrosome separation (PubMed:30404835).

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

NEK2 is closely related in its catalytic domain to the serine/threonineprotein kinase NIMA of *Aspergillus nidulans* which is required for entry into mitosis and may function in parallel to the universal mitotic inducer p34cdc2. Like NIMA, the Nek2 protein is almost undetectable during G1 but accumulates progressively throughout S, reaching maximal levels in late G2. These observations demonstrate that NEK2 resembles *Aspergillus* NIMA, both in its catalytic domain, and cell cycle-dependent expression. Recombinant NEK2 is active as a serine/threonine-specific protein kinase and may undergo autophosphorylation. Both human NEK2 and fungal NIMA phosphorylate a similar, but not identical, set of proteins and synthetic peptides. NEK2 is shown to be expressed most abundantly in adult testis and there is increasing evidence that NEK2 is abnormally expressed in a wide variety of human cancers. This antibody is specific to isoform 2 of NEK2.

NEK2 Antibody (Center) Blocking Peptide - References

Blume-Jensen P, et al. Nature 2001. 411: 355.Cantrell D, J. Cell Sci. 2001. 114: 1439.Jhiang S Oncogene 2000. 19: 5590.Manning G, et al. Science 2002. 298: 1912.Moller, D, et al. Am. J. Physiol. 1994. 266: C351-C359.Robertson, S. et al. Trends Genet. 2000. 16: 368.Robinson D, et al. Oncogene 2000. 19: 5548.Van der Ven, P, et al. Hum. Molec. Genet. 1993. 2: 1889.Vanhaesebroeck, B, et al. Biochem. J. 2000. 346: 561.Van Weering D, et al. Recent Results Cancer Res. 1998. 154: 271.