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KD-Validated Anti-NEK7 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1261

Specification

KD-Validated Anti-NEK7 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	Q8TDX7
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 35 kDa , observed, 35 kDa KDa**
Gene Name	**NEK7**
Aliases	**NIMA Related Kinase 7; NIMA (Never In Mitosis Gene A)-Related Kinase 7; Serine/Threonine-Protein Kinase Nek7; Never In Mitosis A-Related Kinase 7; NimA-Related Protein Kinase 7; EC 2.7.11.34; EC 2.7.11.1**
Immunogen	**A synthesized peptide derived from human NEK7**

KD-Validated Anti-NEK7 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**140609**

Other Names
Serine/threonine-protein kinase Nek7, 2.7.11.34, Never in mitosis A-related kinase 7, NimA-related protein kinase 7, NEK7 {ECO:0000303|PubMed:11701951, ECO:0000312|HGNC:HGNC:13386}

KD-Validated Anti-NEK7 Rabbit Monoclonal Antibody - Protein Information

Name NEK7 {ECO:0000303|PubMed:11701951, ECO:0000312|HGNC:HGNC:13386}

Function
Protein kinase which plays an important role in mitotic cell cycle progression (PubMed:17101132, PubMed:19941817, PubMed:31409757). Required for microtubule nucleation activity of the centrosome, robust mitotic spindle formation and cytokinesis (PubMed:17586473, PubMed:19414596, PubMed:19941817, PubMed:26522158, PubMed:31409757). Phosphorylates EML4 at 'Ser-146', promoting its dissociation from microtubules during mitosis which is required for efficient chromosome congression (PubMed:31409757). Phosphorylates RPS6KB1 (By similarity). Acts as an essential activator of the NLRP3 inflammasome

assembly independently of its kinase activity (PubMed:26642356, PubMed:36442502, PubMed:39173637). Acts by unlocking NLRP3 following NLRP3 tranlocation into the microtubule organizing center (MTOC), relieving NLRP3 autoinhibition and promoting formation of the NLRP3:PYCARD complex, and activation of CASP1 (PubMed:26642356, PubMed:31189953, PubMed:36442502, PubMed:39173637). Serves as a cellular switch that enforces mutual exclusivity of the inflammasome response and cell division: interaction with NEK9 prevents interaction with NLRP3 and activation of the inflammasome during mitosis (PubMed:26642356, PubMed:31189953).

Cellular Location
Nucleus {ECO:0000250|UniProtKB:Q9ES74}. Cytoplasm. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Present at centrosome throughout the cell cycle (PubMed:17586473). Also detected at spindle midzone of the anaphase cells and eventually concentrates at the midbody (PubMed:17586473). Interaction with ANKS3 prevents its translocation to the nucleus (By similarity). {ECO:0000250|UniProtKB:Q9ES74, ECO:0000269|PubMed:17586473}

Tissue Location
Highly expressed in lung, muscle, testis, brain, heart, liver, leukocyte and spleen. Lower expression in ovary, prostate and kidney. No expression seen in small intestine

KD-Validated Anti-NEK7 Rabbit Monoclonal Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KD-Validated Anti-NEK7 Rabbit Monoclonal Antibody - Images

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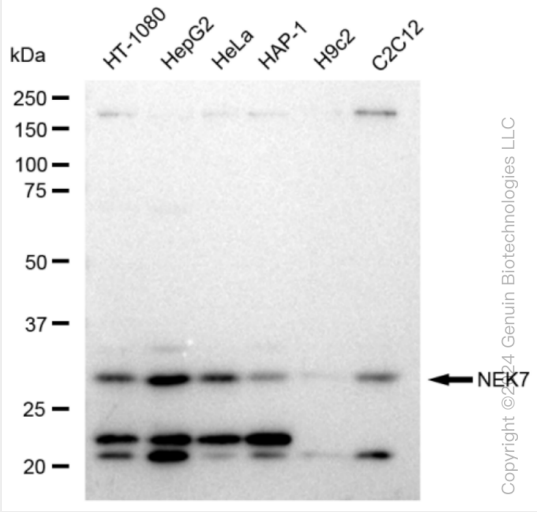
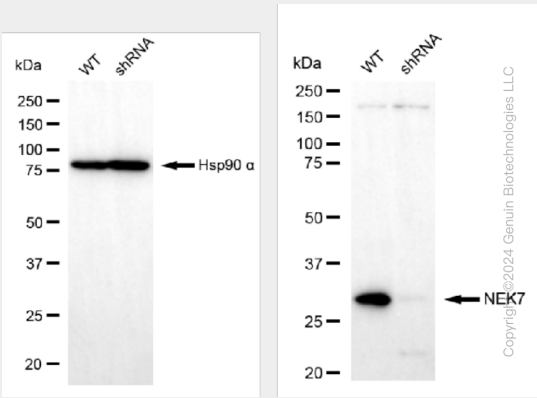
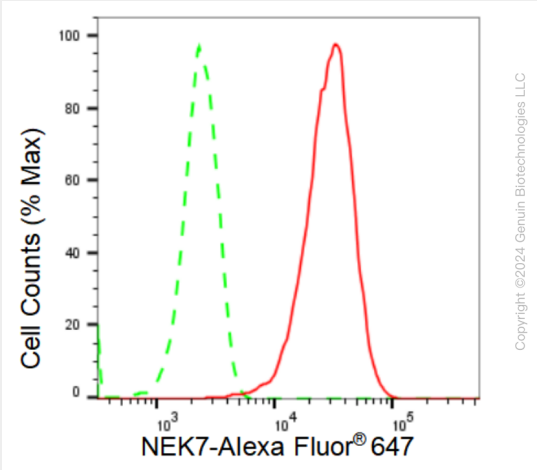


Western blotting analysis using anti-NEK7 antibody (Cat#AGI1261). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-NEK7 antibody (Cat#AGI1261, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-NEK7 antibody (Cat#AGI1261). NEK7 expression in wild type (WT) and NEK7 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-NEK7 antibody (Cat#AGI1261, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of NEK7 expression in HepG2 cells using NEK7 antibody (Cat#AGI1261, 1:2,000). Green, isotype control; red, NEK7.

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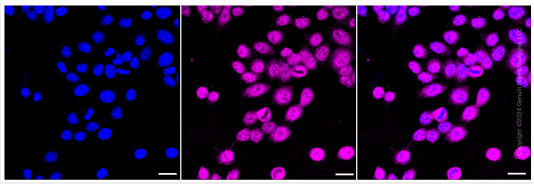

Immunocytochemical staining of HepG2 cells with NEK7 antibody (Cat#AGI1261, 1:1,000). Nuclei were stained blue with DAPI; NEK7 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 µm.