

# CPTC-NME2-1 (CAB080072)

**Uniprot ID:** [P22392](#)

**Protein name:** NDKB\_HUMAN

**Full name:** Nucleoside diphosphate kinase B

**Tissue specificity:** Isoform 1 and isoform 3 are ubiquitously expressed.

**Function:** Major role in the synthesis of nucleoside triphosphates other than ATP. The ATP gamma phosphate is transferred to the NDP beta phosphate via a ping-pong mechanism, using a phosphorylated active-site intermediate (By similarity). Negatively regulates Rho activity by interacting with AKAP13/LBC (PubMed:15249197). Acts as a transcriptional activator of the MYC gene; binds DNA non-specifically (PubMed:8392752, PubMed:19435876). Binds to both single-stranded guanine- and cytosine-rich strands within the nuclease hypersensitive element (NHE) III(1) region of the MYC gene promoter. Does not bind to duplex NHE III(1) (PubMed:19435876). Has G-quadruplex (G4) DNA-binding activity, which is independent of its nucleotide-binding and kinase activity. Binds both folded and unfolded G4 with similar low nanomolar affinities. Stabilizes folded G4s regardless of whether they are prefolded or not (PubMed:25679041). Exhibits histidine protein kinase activity (PubMed:20946858).

**Subcellular location:**

Cytoplasm (*experimental evidence*)

Nucleus (*experimental evidence*)

Cell projection > Lamellipodium (*experimental evidence*)

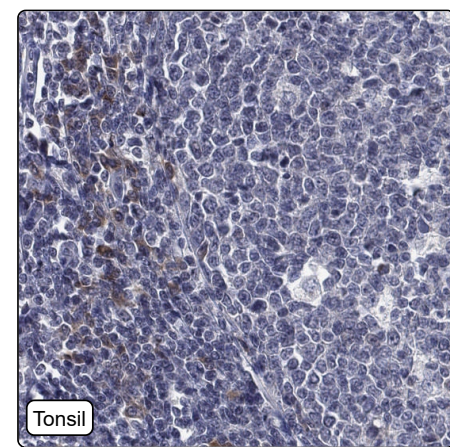
Cell projection > Ruffle (*experimental evidence*)

**NOTE:** Isoform 3 is mainly cytoplasmic and isoform 1 and isoform 3 are excluded from the nucleolus. Colocalizes with ITGB1 and ITGB1BP1 at the edge or peripheral ruffles and lamellipodia during the early stages of cell spreading on fibronectin or collagen but not on vitronectin or laminin substrates.

**Protein existence:** Experimental evidence at protein level

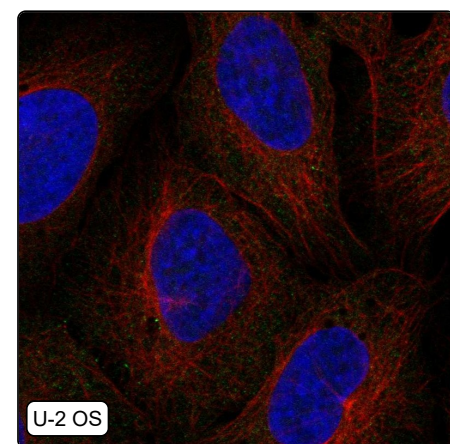
**Comment:**

## Immunohistochemistry



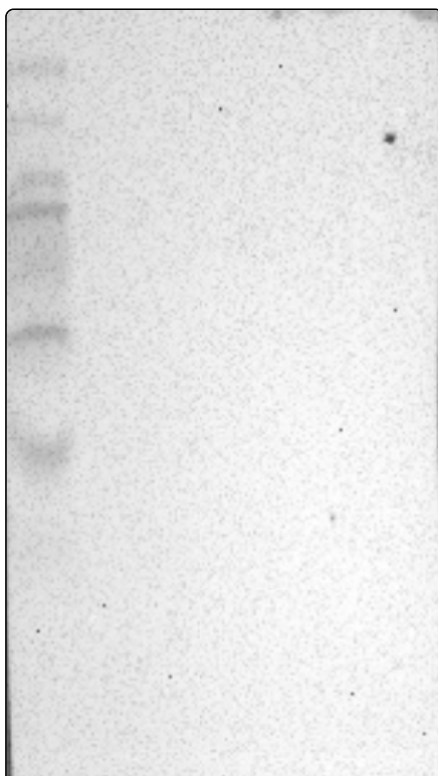
<b>IHC protocol:</b>	HIER pH6, Dilution 1:375
<b>IHC test staining:</b>	Lipofuscin positivity in liver and weak cytoplasmic positivity in a subset of immunecells.
<b>Literature conformance:</b>	Not consistent with gene/protein characterization data
<b>Literature significance:</b>	
<b>RNA similarity:</b>	Very low consistency between antibody staining and RNA expression data
<b>RNA tissue specificity:</b>	Low tissue specificity
<b>RNA tissue distribution:</b>	Detected in all
<b>IHC Sibling similarity:</b>	Other antibody shows dissimilar IHC staining pattern

## Immunofluorescence



<b>IF Overlay:</b>	antibody (green), anti-tubulin (red) and DAPI (blue)
<b>IF main location:</b>	
<b>IF additional location:</b>	
<b>IF approved for publication on HPA:</b>	No
<b>IF in SiHa:</b>	Negative
<b>IF in SK-MEL-30:</b>	Negative
<b>IF in U-2 OS:</b>	Negative

# Western blot



<b>WB Size markers (kDa):</b>	250, 130, 100, 70, 55, 35, 25, 15, 10
<b>WB Lanes:</b>	Marker (1), RT4 (2), U-251 MG (3), Plasma (4), Liver (5), Tonsil (6)
<b>WB Target weight (kDa):</b>	10, 17, 17, 17, 17, 17
<b>WB Validation:</b>	Uncertain (No bands detected.)