

CPTC-LIG3-1 (CAB080348)

Uniprot ID: [P49916](#)

Protein name: DNLI3_HUMAN

Full name: DNA ligase 3

Tissue specificity: Testis, thymus, prostate and heart.

Function: Isoform 3 functions as heterodimer with DNA-repair protein XRCC1 in the nucleus and can correct defective DNA strand-break repair and sister chromatid exchange following treatment with ionizing radiation and alkylating agents. Isoform 1 is targeted to mitochondria, where it functions as DNA ligase in mitochondrial base-excision DNA repair (PubMed:10207110, PubMed:24674627).

Subcellular location:

Isoform 1:

Mitochondrion (*experimental evidence*)

NOTE: Contains an N-terminal mitochondrial transit peptide.

Isoform 2:

Mitochondrion (*curator inference*)

NOTE: Contains an N-terminal mitochondrial transit peptide.

Isoform 3:

Nucleus (*experimental evidence*)

NOTE: Lacks the N-terminal mitochondrial transit peptide.

Isoform 4:

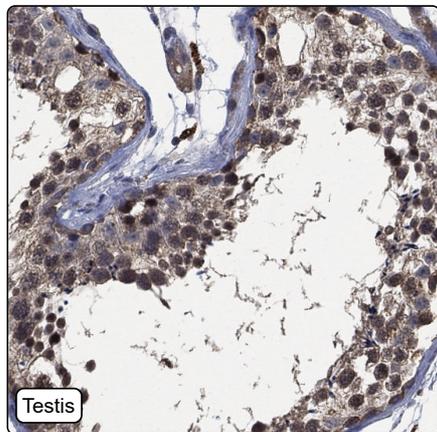
Nucleus (*curator inference*)

NOTE: Lacks the N-terminal mitochondrial transit peptide.

Protein existence: Experimental evidence at protein level

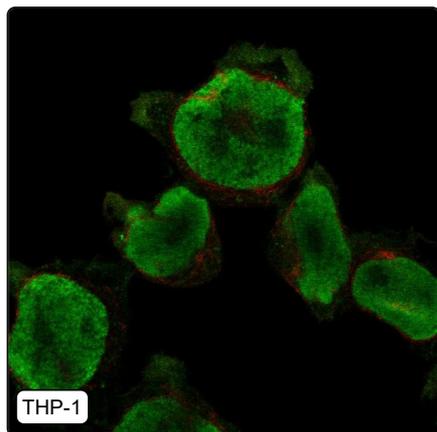
Comment:

Immunohistochemistry



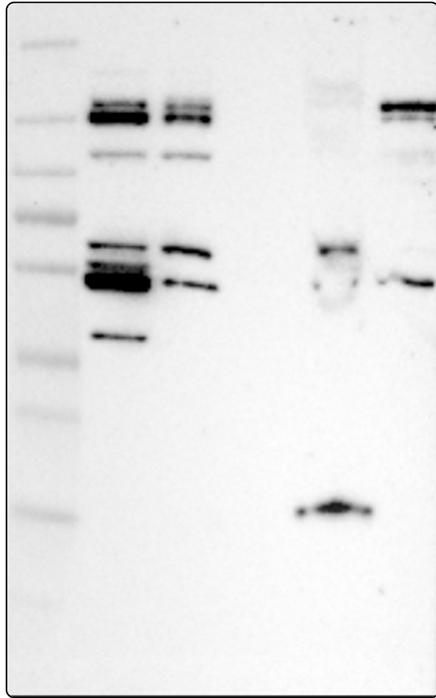
| | |
|--------------------------|--|
| IHC protocol: | HIER pH6, Dilution 1:750 |
| IHC test staining: | Granular cytoplasmic positivity in most tissues. |
| Literature conformance: | Consistent with extensive gene/protein characterization data |
| Literature significance: | |
| RNA similarity: | Medium consistency between antibody staining and RNA expression data |
| RNA tissue specificity: | Low tissue specificity |
| RNA tissue distribution: | Detected in all |
| IHC Sibling similarity: | Other antibody shows dissimilar IHC staining pattern |

Immunofluorescence



| | |
|-------------------------------------|--|
| IF Overlay: | antibody (green), anti-tubulin (red) and DAPI (blue) |
| IF main location: | Nucleoplasm - 1 [3]: Supportive (auto) |
| IF additional location: | |
| IF approved for publication on HPA: | Yes |
| IF in THP-1: | Nucleoplasm |
| IF in U2OS: | Nucleoplasm |

Western blot



| | |
|--------------------------------|---|
| WB Size markers (kDa): | 250, 130, 100, 70, 55, 35, 25, 15, 10 |
| WB Lanes: | Marker (1), RT-4 (2), U-251MG (3), Plasma (4), Liver (5), Tonsil (6) |
| WB Target weight (kDa): | 21, 23, 62, 106, 113 |
| WB Validation: | Supported (Band of predicted size in kDa (+/-20%) with additional bands present.) |