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# Product datasheet for TL512107

## Prkdc Mouse shRNA Plasmid (Locus ID 19090)

### Product data:

| | |
|---|---|
| **Product Type:** | shRNA Plasmids |
| **Product Name:** | Prkdc Mouse shRNA Plasmid (Locus ID 19090) |
| **Locus ID:** | 19090 |
| **Synonyms:** | AI326420; AU019811; DNA-PKcs; DNAPDcs; DNAPK; DNPK1; DOXNPH; dxnph; HYRC1; p460; scid; slip |
| **Vector:** | pGFP-C-shLenti (TR30023) |
| **E. coli Selection:** | Chloramphenicol (34 ug/ml) |
| **Mammalian Cell Selection:** | Puromycin |
| **Format:** | Lentiviral plasmids |
| **Components:** | Prkdc - Mouse, 4 unique 29mer shRNA constructs in lentiviral GFP vector(Gene ID = 19090).<br>5µg purified plasmid DNA per construct<br>29-mer scrambled shRNA cassette in pGFP-C-shLenti Vector, TR30021, included for free. |
| **RefSeq:** | NM_011159, BC028664 |
| **UniProt ID:** | P97313 |

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**Summary:**

Serine/threonine-protein kinase that acts as a molecular sensor for DNA damage (By similarity). Involved in DNA non-homologous end joining (NHEJ) required for double-strand break (DSB) repair and V(D)J recombination (By similarity). Must be bound to DNA to express its catalytic properties (By similarity). Promotes processing of hairpin DNA structures in V(D)J recombination by activation of the hairpin endonuclease artemis (DCLRE1C) (By similarity). The assembly of the DNA-PK complex at DNA ends is also required for the NHEJ ligation step (By similarity). Required to protect and align broken ends of DNA (By similarity). May also act as a scaffold protein to aid the localization of DNA repair proteins to the site of damage (By similarity). Found at the ends of chromosomes, suggesting a further role in the maintenance of telomeric stability and the prevention of chromosomal end fusion (PubMed:12426399). Also involved in modulation of transcription (By similarity). Recognizes the substrate consensus sequence [ST]-Q (By similarity). Phosphorylates 'Ser-139' of histone variant H2AX/H2AFX, thereby regulating DNA damage response mechanism (By similarity). Phosphorylates DCLRE1C, C1D, c-Abl/ABL1, histone H1, HSPCA, c-jun/JUN, p53/TP53, PARP1, POU2F1, DHX9, FH, SRF, XRCC1, XRCC4, XRCC5, XRCC6, WRN, MYC and RFA2 (By similarity). Can phosphorylate C1D not only in the presence of linear DNA but also in the presence of supercoiled DNA (By similarity). Ability to phosphorylate p53/TP53 in the presence of supercoiled DNA is dependent on C1D (By similarity). Contributes to the determination of the circadian period length by antagonizing phosphorylation of CRY1 'Ser-588' and increasing CRY1 protein stability, most likely through an indirect mechanism (PubMed:24158435). Plays a role in the regulation of DNA virus-mediated innate immune response by assembling into the HDP-RNP complex, a complex that serves as a platform for IRF3 phosphorylation and subsequent innate immune response activation through the cGAS-STING pathway (By similarity).[UniProtKB/Swiss-Prot Function]

**shRNA Design:**

These shRNA constructs were designed against multiple splice variants at this gene locus. To be certain that your variant of interest is targeted, please contact techsupport@origene.com. If you need a special design or shRNA sequence, please utilize our custom shRNA service.

**Performance Guaranteed:**

OriGene guarantees that the sequences in the shRNA expression cassettes are verified to correspond to the target gene with 100% identity. One of the four constructs at minimum are guaranteed to produce 70% or more gene expression knock-down provided a minimum transfection efficiency of 80% is achieved. Western Blot data is recommended over qPCR to evaluate the silencing effect of the shRNA constructs 72 hrs post transfection. To properly assess knockdown, the gene expression level from the included scramble control vector must be used in comparison with the target-specific shRNA transfected samples.

For non-conforming shRNA, requests for replacement product must be made within ninety (90) days from the date of delivery of the shRNA kit. To arrange for a free replacement with newly designed constructs, please contact Technical Services at techsupport@origene.com. Please provide your data indicating the transfection efficiency and measurement of gene expression knockdown compared to the scrambled shRNA control (Western Blot data preferred).