

LIG4 Blocking Peptide (N-term)
Synthetic peptide
Catalog # BP20303a**Specification**

LIG4 Blocking Peptide (N-term) - Product InformationPrimary Accession [P49917](#)**LIG4 Blocking Peptide (N-term) - Additional Information****Gene ID** 3981**Other Names**

DNA ligase 4, DNA ligase IV, Polydeoxyribonucleotide synthase [ATP] 4, LIG4

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.

LIG4 Blocking Peptide (N-term) - Protein Information**Name** LIG4 {ECO:0000303|PubMed:16357942, ECO:0000312|HGNC:HGNC:6601}**Function**

DNA ligase involved in DNA non-homologous end joining (NHEJ); required for double-strand break (DSB) repair and V(D)J recombination (PubMed:8798671, PubMed:9242410, PubMed:9809069, PubMed:12517771, PubMed:17290226, PubMed:23523427, PubMed:29980672, PubMed:33586762). Catalyzes the NHEJ ligation step of the broken DNA during DSB repair by resealing the DNA breaks after the gap filling is completed (PubMed:9242410, PubMed:9809069, PubMed:12517771, PubMed:17290226). Joins single-strand breaks in a double-stranded polydeoxynucleotide in an ATP-dependent reaction (PubMed:9242410, PubMed:<a

[9809069](http://www.uniprot.org/citations/9809069), PubMed: [12517771](http://www.uniprot.org/citations/12517771), PubMed: [17290226](http://www.uniprot.org/citations/17290226)). LIG4 is mechanistically flexible: it can ligate nicks as well as compatible DNA overhangs alone, while in the presence of XRCC4, it can ligate ends with 2-nucleotides (nt) microhomology and 1-nt gaps (PubMed: [17290226](http://www.uniprot.org/citations/17290226)). Forms a subcomplex with XRCC4; the LIG4-XRCC4 subcomplex is responsible for the NHEJ ligation step and XRCC4 enhances the joining activity of LIG4 (PubMed: [9242410](http://www.uniprot.org/citations/9242410), PubMed: [9809069](http://www.uniprot.org/citations/9809069)). Binding of the LIG4-XRCC4 complex to DNA ends is dependent on the assembly of the DNA-dependent protein kinase complex DNA-PK to these DNA ends (PubMed: [10854421](http://www.uniprot.org/citations/10854421)). LIG4 regulates nuclear localization of XRCC4 (PubMed: [24984242](http://www.uniprot.org/citations/24984242)).

Cellular Location

Nucleus

Tissue Location

Testis, thymus, prostate and heart.

LIG4 Blocking Peptide (N-term) - Protocols

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

- [Blocking Peptides](#)

LIG4 Blocking Peptide (N-term) - Images**LIG4 Blocking Peptide (N-term) - Background**

Efficiently joins single-strand breaks in a double-stranded polydeoxynucleotide in an ATP-dependent reaction. Involved in DNA non-homologous end joining (NHEJ) required for double-strand break repair and V(D)J recombination. The LIG4-XRCC4 complex is responsible for the NHEJ ligation step, and XRCC4 enhances the joining activity of LIG4. Binding of the LIG4-XRCC4 complex to DNA ends is dependent on the assembly of the DNA-dependent protein kinase complex DNA-PK to these DNA ends.