

PRODUCT INFORMATION



LIG4 BRCT domains (human, recombinant)

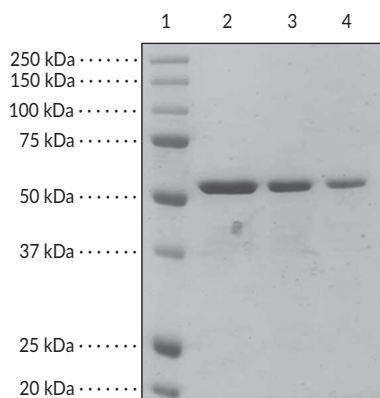
Item No.14169

Overview and Properties

Synonyms: DNA Ligase 4, Polydeoxyribonucleotide Synthase [ATP] 4
Source: Recombinant human N-terminal GST-tagged protein expressed in *E. coli*
Amino Acids: 1634-1863
Uniprot No.: P49917
Molecular Weight: 57.6 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: *batch specific* (≥90% estimated by SDS-PAGE)
Supplied in: 50 mM Tris, pH 8.0, containing 150 mM sodium chloride and 20% glycerol
Protein Concentration: *batch specific* mg/ml
Activity: *batch specific* U/ml
Specific Activity: *batch specific* U/mg

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: LIG4 BRCT domains (5 µg)
Lane 3: LIG4 BRCT domains (2.5 µg)
Lane 4: LIG4 BRCT domains (1.25 µg)

Representative gel image shown; actual purity may vary between each batch.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

DNA Ligase 4 (LIG4) is a large protein belonging to the ATP-dependent DNA ligase family.¹ LIG4 contains two BRCA1 C-terminal (BRCT) domains. BRCT domains are modular units of ~100 amino acids that fold independently and recognize linear phosphoserine or phosphothreonine regions to mediate protein-protein and protein-DNA interactions.²⁻³ BRCT domains were initially recognized in the C-terminal region of the breast cancer protein BRCA1, as well as the p53 binding protein and the yeast cell cycle checkpoint protein RAD9.⁴ BRCT domains often occur as tandem repeats at the C-terminal end of several proteins that are functionally diverse.³ Most BRCT domain-containing proteins participate in DNA-damage checkpoint control or DNA-repair pathways, or both.⁴⁻⁵ Thus, BRCT domain-containing proteins likely participate in the cellular response to DNA damage.

LIG4 forms a complex with the DNA repair protein Xrcc4 to play an essential role in DNA non-homologous end joining during DNA double-strand break repair and V(D)J recombination, which is the rearrangement of immunoglobulin and T-cell receptor genes.⁶⁻⁸ Cells lacking either of these proteins are hypersensitive to ionizing radiation. Mutations of the gene that encodes this protein results in an autosomal recessive disease called LIG4 syndrome, which is characterized by microcephaly, unusual facial features, growth retardation, developmental delay, skin anomalies, and is associated with pancytopenia (reduction of red blood cells, white blood cells, and platelets).⁹⁻¹⁰ This protein product contains the tandem BRCT domain region of LIG4.

References

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