

Datasheet for ABIN968692 anti-LIG3 antibody (AA 2-115)



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Overview

Quantity:	50 µg
Target:	LIG3
Binding Specificity:	AA 2-115
Reactivity:	Human, Mouse, Rat, Dog
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This LIG3 antibody is un-conjugated
Application:	Western Blotting (WB), Immunofluorescence (IF)

Product Details

Immunogen:	Human DNA Ligase III aa. 2-115
Clone:	7-D Ligase III
Isotype:	IgG1
Cross-Reactivity:	Dog (Canine), Rat (Rattus), Mouse (MURINE)
Characteristics:	<ol style="list-style-type: none"> 1. Since applications vary, each investigator should titrate the reagent to obtain optimal results. 2. Please refer to us for technical protocols. 3. Source of all serum proteins is from USDA inspected abattoirs located in the United States. 4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
Purification:	The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity

Product Details

chromatography.

Target Details

Target:	LIG3
Alternative Name:	DNA Ligase III (LIG3 Products)
Background:	Cells have evolved DNA repair pathways that are dedicated to the maintenance of DNA integrity. In such pathways, damaged DNA is excised and the resulting gap is filled by DNA polymerase. Human DNA ligases, ligase I, III, and IV, utilize ATP as a co-factor in DNA joining reactions required for base excision and single strand break repair pathways. All DNA ligases contain an RFPR sequence and an active site motif (ASM) on each side of their catalytic domain. The RFPR is required for transfer of an AMP group from the enzyme to the 5'-phosphate terminus of a DNA nick. In addition, DNA ligase III has an N-terminal zinc finger domain (ZFD) that is homoloquous with the zinc fingers found in poly(ADP-ribose) polymerase (PARP). This domain is not required for DNA ligase activity, but enables DNA ligase III to interact with single strand gaps and single strand flaps. During base excision repair (BER), ATP-dependent ligation requires PARP, DNA polymerase beta, and DNA ligase III interaction with XRCC1 within the BER complex. Thus, DNA ligase III may contain unique protein sequences that allow interaction and repair of specific types of DNA damage.
Molecular Weight:	103 kDa
Pathways:	DNA Damage Repair

Application Details

Comment:	Related Products: ABIN968537, ABIN967389
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	250 µg/mL
Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09 % sodium azide.
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which

Handling

should be handled by trained staff only.

Storage: -20 °C

Storage Comment: Store undiluted at -20° C.

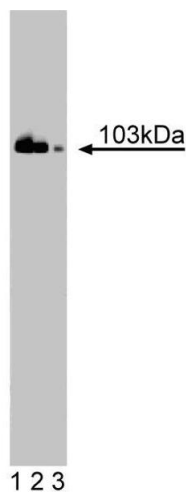
Publications

Product cited in: Oei, Ziegler: "ATP for the DNA ligation step in base excision repair is generated from poly(ADP-ribose)." in: **The Journal of biological chemistry**, Vol. 275, Issue 30, pp. 23234-9, (2000) ([PubMed](#)).

Taylor, Whitehouse, Caldecott: "The DNA ligase III zinc finger stimulates binding to DNA secondary structure and promotes end joining." in: **Nucleic acids research**, Vol. 28, Issue 18, pp. 3558-63, (2000) ([PubMed](#)).

Mackey, Niedergang, Murcia, Leppard, Au, Chen, de Murcia, Tomkinson: "DNA ligase III is recruited to DNA strand breaks by a zinc finger motif homologous to that of poly(ADP-ribose) polymerase. Identification of two functionally distinct DNA binding regions within DNA ligase III." in: **The Journal of biological chemistry**, Vol. 274, Issue 31, pp. 21679-87, (1999) ([PubMed](#)).

Chen, Tomkinson, Ramos, Mackey, Danehower, Walter, Schultz, Besterman, Husain: "Mammalian DNA ligase III: molecular cloning, chromosomal localization, and expression in spermatocytes undergoing meiotic recombination." in: **Molecular and cellular biology**, Vol. 15, Issue 10, pp. 5412-22, (1995) ([PubMed](#)).



Western Blotting

Image 1. Western blot analysis of DNA Ligase III on Jurkat cell lysate. Lane 1: 1:10000, lane 2: 1:20000, lane 3: 1:40000 dilution of anti-DNA Ligase III.