# Purified Mouse Anti-DNA Ligase III

## Product Information
- **Material Number:** 611877
- **Size:** 150 µg
- **Concentration:** 250 µg/ml
- **Clone:** 7/DNA Ligase III
- **Immunogen:** Human DNA Ligase III aa. 2-115
- **Isotype:** Mouse IgG1
- **Reactivity:**
  - QC Testing: Human
  - Tested in Development: Dog, Rat, Mouse
- **Target MW:** 103 kDa
- **Storage Buffer:** Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

## Description
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 homologous 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 β, 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.

## Preparation and Storage
The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. Store undiluted at -20° C.

## Application Notes

<table>
<thead>
<tr>
<th>Application</th>
<th>Routinely Tested</th>
<th>Not Recommended</th>
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<tbody>
<tr>
<td>Western blot</td>
<td></td>
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<tr>
<td>Immunofluorescence</td>
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</tbody>
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## Western blot analysis of DNA Ligase III on Jurkat lysate.
Lane 1: 1:10000, lane 2: 1:20000, lane 3: 1:40000 dilution of DNA Ligase III.
### Suggested Companion Products

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Name</th>
<th>Size</th>
<th>Clone</th>
</tr>
</thead>
<tbody>
<tr>
<td>611451</td>
<td>Jurkat Cell Lysate</td>
<td>500 µg</td>
<td>(none)</td>
</tr>
<tr>
<td>554002</td>
<td>HRP Goat Anti-Mouse Ig</td>
<td>1.0 ml</td>
<td>(none)</td>
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<tr>
<td>554001</td>
<td>FITC Goat Anti-Mouse Ig</td>
<td>0.5 mg</td>
<td>Polyclonal</td>
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### Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
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.

### References