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**IG Intact Genomics®**

## Taq DNA Ligase

## Manual

<b>Catalog #</b>	<b>3219</b>
<b>Package Size</b>	10,000 units
<b>Volume</b>	250 µl
<b>Concentration</b>	40 units/µl



### Important!

#### **-20°C Storage Required**

- \* Immediately inspect packages
- \* Freeze upon receipt

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**Taq DNA Ligase**

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### Description:

Intact Genomics (ig<sup>®</sup>) *Taq* DNA Ligase catalyzes the formation of a phosphodiester bond in duplex DNA containing adjacent 5'-phosphoryl and 3'-hydroxyl termini, using NAD<sup>+</sup> as a cofactor. The ligation will occur only if the oligonucleotides are perfectly paired to the complementary target DNA and have no gaps between them; therefore, a single-base substitution can be detected. *Taq* DNA Ligase is active at elevated temperatures (45°C-70°C) <sup>(1, 2)</sup>.

### Protein Purity:

The physical purity of this enzyme is ≥99% as assessed by SDS-PAGE with Coomassie<sup>®</sup> blue staining (see figure below).

### Product Source:

*E. coli* strain expressing the cloned *Taq* DNA ligase gene from *Thermus aquaticus* HB8.

### Applications:

- Allele-specific gene detection by using Ligase Detection Reaction (LDR) and Ligase Chain Reaction (LCR) <sup>(1)</sup>.
- Mutagenesis by incorporation of a phosphorylated oligonucleotide during primer extension amplification <sup>(3)</sup>.

### Product Components:

- *Taq* DNA Ligase
- 10x *Taq* DNA Ligase Buffer with NAD<sup>+</sup>

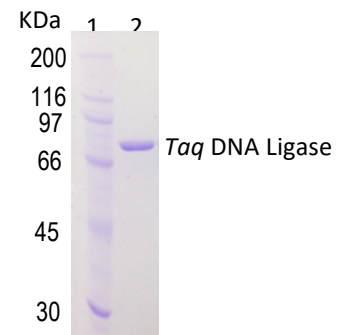


Figure: Lane 1. Protein Marker  
Lane 2. *Taq* DNA Ligase

## Storage Temperature:

-20°C

## Storage Buffer:

50 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25°C

## 10x Taq DNA Ligase Reaction Buffer with NAD<sup>+</sup>:

500 mM Tris-HCl, 100 mM MgCl<sub>2</sub>, 100 mM DTT, 10 mM NAD<sup>+</sup>, pH 7.5 @ 25°C

## Unit Definition:

One unit is defined as the amount of *Taq* DNA Ligase required to join 50% of 1 µg of the 12-base cohesive ends of Lambda DNA cut with Sma I and Sal I in 50 µl reaction in 15 min incubation at 45°C.

## Quality Control:

*Taq* DNA Ligase is free from detectable RNase or contaminating DNA endonuclease activities.

## Protocol:

- 1) Set-up the reaction as follows:

DNA	x µl (up to 1 µg)
10x Taq DNA Ligase Buffer	5.0 µl
Taq DNA Ligase	2.0 µl
H <sub>2</sub> O up to	50.0 µl

- 2) Incubate at 50°C for 15-30 minutes.

### Related Products:

- T4 DNA Polymerase (Cat.# 3222)
- Taq DNA Polymerase 2x Premix (Cat.# 3249)
- T4 DNA Ligase (Cat.# 3212)

### Ordering Information:

- Order online within the USA. Place orders on **www.intactgenomics.com** using our secure Shopping Cart.
- Order by email, phone, or fax.  
Email: **sales@intactgenomics.com**  
Phone: (314) 942-3655 | Toll-free : 855-835-7172 | Fax: (314) 942-3656
- Order via our distributors.

### References:

1. Barany, F. (1991). Proc. Natl. Acad. Sci. USA. 88, 189-193.
2. Takahashi, M. et al. (1984). J. Biol. Chem. 259, 10041-10047.
3. Michael, S.F. (1994). Biotechniques. 16, 411-412.

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Our hours are Monday - Friday, 8AM to 5PM, U.S. Central Standard Time.

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