Taq DNA Ligase

Manual

Catalog #	**3219**
Package Size	10,000 units
Volume	250 µl
Concentration	40 units/µl

Important!

-20°C Storage Required

* Immediately inspect packages
* Freeze upon receipt

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Intact Genomics, Inc.

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Description:

Intact Genomics (ig®) *Taq* DNA Ligase catalyzes the formation of a phosphodiester bond in duplex DNA containing adjacent 5'-phosphoryl and 3'-hydroxyl termini, using NAD^+ 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) [1, 2].

Protein Purity:

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

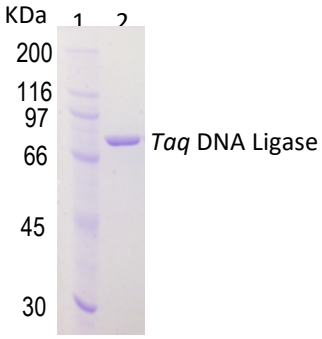

Figure: Lane 1. Protein Marker
Lane 2. *Taq* DNA Ligase

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) [1].
- Mutagenesis by incorporation of a phosphorylated oligonucleotide during primer extension amplification [3].

Product Components:

- *Taq* DNA Ligase
- 10x *Taq* DNA Ligase Buffer with NAD^+

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 @ 25ºC

10x *Taq* DNA Ligase Reaction Buffer with NAD^+:

500 mM Tris-HCl, 100 mM $MgCl_2$, 100 mM DTT, 10 mM NAD^+ , pH 7.5 @ 25ºC

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_2O 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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