Life Technologies™
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Taq DNA Ligase

Intact Genomics®

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

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).

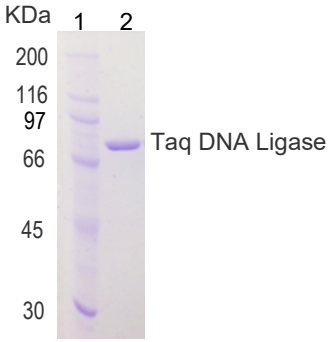

Figure: Lane 1. Protein Marker
Lane 2. *Taq* DNA Ligase

- **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 Includes

1) *Taq* DNA Ligase
2) 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.

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

Related Products

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

Technical Support

Intact Genomics is committed to supporting the worldwide scientific research community by supplying the highest quality reagents. Each new lot of our products is tested to ensure they meet the quality standards and specifications designated for the product. Please follow the instructions carefully and contact us if additional assistance is needed. We appreciate your business and your feedback regarding the performance of our products in your applications.

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