

Catalog #	1741
Synonyms	Thermostable Ligase, Ampligase
Type	Recombinant
Source	E. coli
Species	Thermus aquaticus
Tag	His6
Form	50% Glycerol solution + Reaction Buffer 10x
Purity	>95% by SDS PAGE
Shipping	Ice pack

### Introduction

[Taq Ligase](https://www.protean.bio/en/article/taq-dna-ligase) is thermostable DNA ligase from the thermophilic bacterium *Thermus aquaticus* cloned to *E. coli* cells. This enzyme is able to be stable and active at much higher temperatures than conventional DNA ligases and could be used at PCR conditions. However, it cannot be used to replace T4 DNA Ligase in most cloning methods due to insufficient activity at low temperatures where 2- and 4-base cohesive ends form stable duplexes or blunt ends.

### Description

Taq Ligase is a 74 kDa *Thermus aquaticus* ligase protein catalyzing the NAD-dependent ligation of adjacent 3-hydroxyl and 5-phosphate termini in duplex DNA structures. It does not exhibit activity on blunt ends or RNA substrates. This enzyme is active in a variety of DNA polymerase buffers within a pH range of 7-8.

### Application

Gibson assembly, ligation amplification (LCR), repeat expansion detection (RED), high-fidelity gene synthesis from overlapping oligodeoxynucleotides, multiple site mutagenesis, targeted inverted repeat amplification, next generation sequencing (NGS). More [details here](https://www.protean.bio/en/article/taq-dna-ligase).

### Purification method

Affinity chromatography

### Formulation

Storage buffer: 50 mM Tris-HCl (pH 7.5), 100 mM NaCl, 0.1 mM EDTA, 0.1% Triton X-100, 1 mM dithiothreitol. 10x Reaction Buffer: 200 mM Tris-HCl (pH 8.3), 250 mM KCl, 100 mM MgCl<sub>2</sub>, 5 mM NAD, and 0.1% Triton X-100.

### Specificity

DNA

### Storage

Store at -80C

**For research use only. Not for use in diagnostic procedures.**