# Intact Genomics® T4 gp47 protein

| Catalog #: | Package Size | Concentration |
|---|---|---|
| 3542 | 25 µl (50 µg) | 2 µg/µl |
| 3545 | 250 µl (500 µg) | 2 µg/µl |

## Description

Spontaneous double-strand break (DSB) is one of the most deleterious forms of DNA damage, and their improper repair can lead to cellular dysfunction. The Mre11 (a nuclease) and Rad50 (an ATPase) form a well-conserved MR complex that is involved in the initial processing of DSB (1). The T4 MR (gp46/47) complex is required for homologous recombination and DSB repair (2). The physiological function of the MR complex is a DNA nuclease, which is carried out by the Mre11 subunit. T4 Rad50 (gp46) is always required for the activity of T4 Mre11(gp47) but ATP is only activating when repetitive exonuclease activity is assayed, suggesting that ATP hydrolysis is involved in the translocation of the MR complex along the DNA substrate (3).

## Protein Purity

The physical purity of this enzyme is ≥98% as assessed by SDS-PAGE with Coomassie® blue staining (Fig. 1).

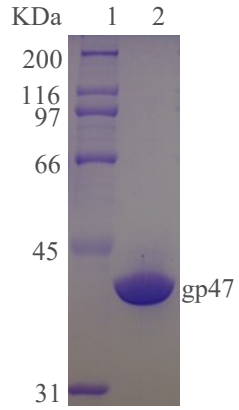


Fig. 1: Lane 1, Protein marker and lane 2, gp47.

## Product Source

*E. coli* BL21 (DE3) strain expressing T4 gp47 gene.

## Product Includes

- T4 gp47 protein
- 10X gp47 reaction buffer

## 1x gp47 reaction buffer composition

50 mM Tris-HCl
50 mM KCl
5 mM MgCl2
0.3 mM MnCl2
0.1 mg/ml BSA
pH 7.6 @ 25ºC

## Storage Buffer

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

## Storage Temperature

-20ºC

## Quality Control assays

Gp47 is free from detectable RNase, Endonuclease (nicking) and non-specific DNase activities.

## References


1. Buis J., Wu Y., Deng Y., Leddon J., Westfield G., Eckersdorff M., Sekiguchi J. M., Chang S., Ferguson D. O. (2008) Cell 135, 85–96
2. Kreuzer K. N., Yap W. Y., Menkens A. E., Engman H. W. (1988) J. Biol. Chem. 263, 11366–11373
3. Herdendorf T. J., Albrecht D. W., Benkovic S. J., Nelson S. W. (2011) J. Biol. Chem. 286, 2382–2392