

# Lambda Beta

Catalog #:	Package Size	Concentration
3611	50 µl (100 µg)	2 µg/µl
3613	250 µl (500 µg)	2 µg/µl

## Description

The Red system of bacteriophage  $\lambda$  consists of three proteins that promote DNA recombination initiated at dsDNA breaks or at the overlapping ends of the linear  $\lambda$  chromosome (1). The *exo* gene (*red $\alpha$* ) encodes  $\lambda$  exonuclease, a 24-kDa protein with 5'→3' exonuclease activity (2). The *bet* gene (*red $\beta$* ) encodes the 29-kDa  $\beta$  protein, which binds ssDNA and promotes annealing of complementary strands (3). The *gam* gene encodes the 16-kDa  $\gamma$  protein, which binds and inhibits host nuclease enzymes (4).

## Applications

- Bind ssDNA
- Promote annealing of complementary strands
- Promote some RecA-like strand exchange and invasion reactions in vitro

## Quality Control

Quality control is performed following the production of each new lot of product to ensure that it meets the quality standards and specifications designated for the product. Each lot is repeatedly compared side-by-side with leading competitors to ensure our products outperform the competitor before product launching.

Lambda beta is free from detectable nuclease and RNase activities.

## Protein purity

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

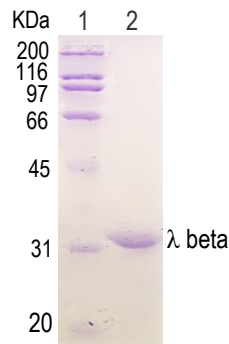


Fig: Lane 1, Protein marker  
Lane 2,  $\lambda$  beta

## Source

*E. coli* cells carrying  $\lambda$  *red $\beta$*  gene.

## Contents & Storage

- Lambda beta
- 10x Lambda beta reaction buffer

Store all contents at -20 °C.

## 10x Lambda beta reaction buffer

670 mM Glycine-KOH  
25 mM MgCl<sub>2</sub>  
500 µg/ml BSA  
pH 9.4 @ 25°C.

## Storage Buffer

50 mM Tris-HCl (pH 7.5), 0.1 mM EDTA, 1 mM  $\beta$ -mercaptoethanol, 1 mM DTT and 50% (v/v) glycerol.

## Inactivation

Inactivated by heating at 70°C for 20 min.

## References

1. Poteete AR. FEMS Microbiol Lett 2001; 201:9 -14.
2. Little, J.W. (1981). Gene Ampli. Anal. 2, 135-145.
3. Kmiec E, Holloman WK. J Biol Chem 1981; 256:12636 -12639.
4. Marsic N, Roje S, Stojiljkovic I, Salaj-Smic E, Trgovcevic Z. J Bacteriol 1993;175:4738 -4743.