Quick DNA Ligation Kit

Item Item No. Q665687
Storage condition: -20℃

Product content

Component	Q665687-100T
Quick T4 DNA Ligase (15U/μl)	100 μl
2×Quick Ligation Reaction Buffer	5×200μl

Product Introduction

The Quick Ligation Reaction Kit allows ligation of DNA sticky or flush ends in 5 minutes at room temperature (25° C). The kit contains Quick T4 DNA Ligase and 2×Quick Ligation Reaction Buffer optimized for fast and efficient DNA ligation.The ligation efficiency of Quick Ligation is equivalent to 1 hour of conventional ligation with T4 DNA Ligase. The Quick Ligation products can be used directly in routine bacterial transformation experiments.

matters needing attention

1. This kit enables most of the linkage reactions to reach the reaction endpoint within 5 minutes or less at 25° C. Increasing the reaction time will not enhance the reaction efficiency. If you use the rapid connection reaction after 1 hour, the conversion efficiency will be significantly reduced; if the rapid connection reaction at 25 ℃ overnight, the conversion efficiency will drop to 75%.
2. 2×Quick Ligation Reaction Buffer contains ATP, which should be thawed on ice and mixed thoroughly before use. It is recommended to freeze the buffer in small tubes for the first time, so as to avoid repeated freezing and thawing, which will affect the efficiency of DNA ligation.
3. Since T4 DNA Ligase contains glycerol, which is sticky and easy to hang on the wall, it is recommended to collect the liquid to the bottom of the tube by centrifugation for a short period of time before use, and the tip of the lance should not go too deep into the liquid surface when taking samples to avoid sticking to the tip of the lance and causing losses.
4. If the quick ligation product is used for electrotransformation, the PEG in the quick ligation reaction system will affect the efficiency of electrotransformation, and it is recommended to use a centrifugal column to purify the ligation product from DNA before electrotransformation.

Usage

ingredient	20μl system
Vector DNA	Xμl(10-100)ng
Insert DNA	Yμl
2×Quick Ligation Reaction Buffer	10μl
Quick T4 DNA Ligase (15U/μl)	1μl
RNase-Free Water	Make up to 20 μl

1. The reaction solution was prepared according to the following system:
*The amount of Insert DNA used: the molar ratio of Vector DNA and Insert DNA is generally 1:3-1:8, and the appropriate molar ratio of Vector DNA and Insert DNA can be selected according to the experimental situation.Calculation of DNA

molar number: DNA molar number (nmol)=DNA mass (ng)/(660daltons x number of inserted DNA bases bp).

2. mix gently and centrifuge briefly. react at 25° C for 5 minutes.

Note: The reaction time should not exceed 15 minutes, otherwise the connection efficiency will be reduced.

3. Do not perform heat inactivation reactions. Centrifuge instantly and collect the solution from the wall to the bottom of the tube.

Note: Heat inactivation significantly reduces transformation efficiency due to the presence of PEG in the buffer.

4. After the reaction, store the DNA ligation product at 0-4℃, and then carry out transformation experiments; you can also store the DNA ligation product at -20℃.

Note: When transforming by chemical method, do not add more than 10% of the volume of the receptor cell for the ligation product.

5. Heat shock the ligation product to transform 50 μl of receptor cells or take 1-2 μl of ligation product to electroshock transform 50 μl of receptor cells.

Note: 1) When transforming by chemical method, do not add more than 10% of the volume of the receptor cell for the ligation product.

(2) If the quick ligation product is used for electrotransformation, it is recommended to use a centrifugal column to purify the ligation product from DNA before electrotransformation because the PEG in the quick ligation reaction system will affect the efficiency of electrotransformation.