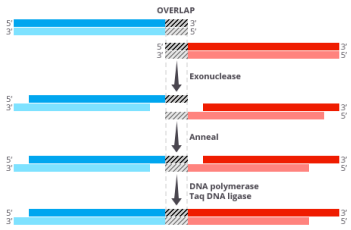
DESCRIPTION

The Gene Synthetic Assembly Kit is an enzymatic one-step and isothermal assembly method for gene assembly based on the Gibson assembly. It is a simple and robust method for assembling multiple fragments of DNA into larger constructs in one step. It allows one to join multiple linear segments into either one large linear segment or, if the segments contain the appropriate components and overlaps, an intact plasmid.

For best results in assembling segments of DNA, ensure segments contain at least 20bp of homology with the segment they are being joined to (Tm of overlapping region must be ≥ 48°C). Homology overlaps can vary in length from as few as 15bps up to 80bps. The efficacy depends on number of fragments assembled.



KEY FEATURES

❖ Highly Powerful: One reaction can assemble multiple gene synthesis.

❖ Highly efficient: The reaction can be performed in 1 hour.

❖ Streamlined protocol: Just Add, Mix, and Incubate.

APPLICATIONS

Gene synthetic assembly
Gene cloning.

KIT CONTENTS

Catalog	Name	Kit Size	Reaction
TBS4032-10	2x Gene Assembly	1x100 µL	10RXNS
TBS4032-50	2x Gene Assembly	5x100 µL	50 RXNs

STORAGE CONDITIONS

The kit is shipped on ice and stored at -20°C for long-term storage. Shelf life of 12 months after receipt.

For research use only.

GENE ASSEMBLY PROTOCOL

Prepping PCR fragments for assembly

1. Design PCR primers: Design primers so that the DNA fragments can be fused to the overlap at the junction. For example, if you want to insert one PCR fragment into a target vector, the 5' end of the forward primer would perfectly match the pairs present on one side of the plasmid cut site, and the 5' end of the reverse primer would perfectly match the base pairs present on the other side of the plasmid cut site.

2. Prepare DNA fragments: Use PCR to produce the DNA segments needed for assembling the new construct.

ASSEMBLY

3. Set up of reaction volume of 20 µL as below:

Reaction Component	Volume (µL) Per Sample
2x Gene Assembly Mix	10.0
DNA fragments	10.0
Total Volume	20 µL

4. Combine DNA fragment in an equimolar ratio in a final volume of 10 µL.
5. Add 10 µL of 2x Gene Assembly Mix, Flick the tube several times, and centrifuge to collect the sample at the bottom of the tube.
6. Reaction Condition: Incubate the reaction tube at 50°C for 30 – 60 min.

OPTIONAL

7. Transform DH5α using 10uL reaction products.
8. Sequence clones.

RELATED PRODUCTS

TBS4007: High Fidelity PCR Mix