Benchtop Gibson Assembly® HiFi 1 Step and Ultra Kits

Efficient, high fidelity, seamless assembly and cloning of multiple fragments

Developed by Dr. Daniel Gibson, Telesis Bio's Chief Technology Officer, the Gibson Assembly® method (1, 2) allows the insertion of single or multiple DNA fragments into a vector in a single round of cloning without the need for compatible restriction sites. Developed by Dr. Daniel Gibson and Telesis Bio, the Gibson Assembly® method has been cited in over one thousand publications.

The Gibson Assembly Method

To perform Gibson Assembly® cloning, dsDNA fragments with 20–40 bp overlapping ends are generated by PCR, prepared by restriction digestion, or synthesized (e.g., DNA Tiles™). The insert(s) and vector DNA are combined with Gibson Assembly® reagents and incubated. During incubation, the Gibson Assembly reagents mediate the generation of compatible ends, followed by annealing, extension, repair and ligation to create a fully assembled seamless DNA construct.

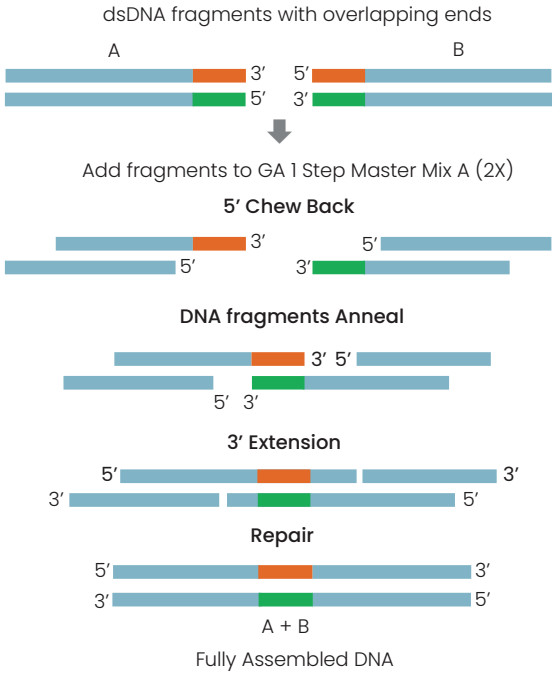
Highlights

- High fidelity seamless DNA assembly
- Simple design and few manipulations
- Faster than conventional cloning methods
- Resulting constructs are double stranded and ready for multiple downstream applications
- Formulated for a high degree of sequence accuracy

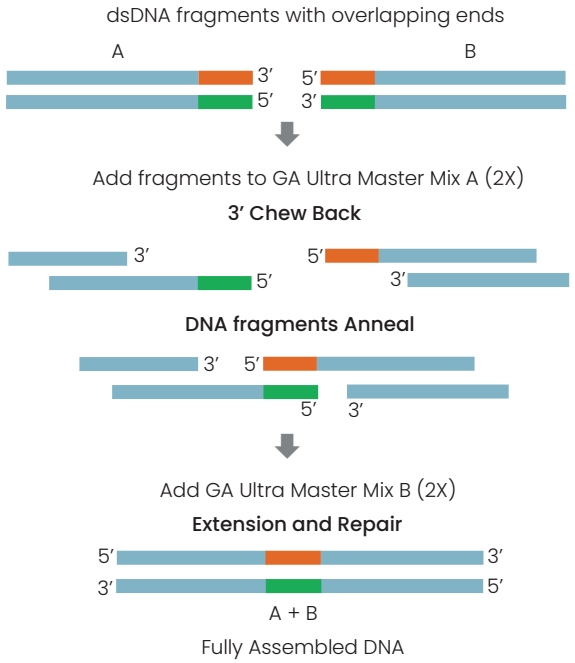
How it Works

- During assembly, DNA fragments undergo:
- Chew Back
- Annealing
- Extension
- Repair

Overview of the Gibson Assembly® HiFi 1 Step Method



Overview of the Gibson Assembly® Ultra Method



Part number 47712 | Revision 1.0 | Effective 15APR2024

Applications

- Multiple Insert Cloning- Clone multiple inserts without relying on the availability of restriction sites
- Large Fragment Assemblies- Assemble gene clusters and genome-size fragments
- Mutagenesis- Site-directed mutagenesis to make simultaneous changes in a single reaction

Synopsis

- Robust, complex assemblies with 90–95% cloning efficiencies
- Assembles without requiring restriction enzyme sites
- Utilize any vector with simple design strategies
- Fast, efficient, isothermal assemblies in 1 hour with the HiFi 1 Step Kit
- Complex assemblies of up to 15 inserts simultaneously with the Ultra Kit

Product Ordering Information

Product	VWR Cat. No	Product	VWR Cat. No
KIT GIBSON ASSEMBLY HIFI 1 STEP STARTER (5 RXN)	10820-608	KIT GIBSON ASSEMBLY ULTRA STARTER (5 RXN)	10820-618
KIT GIBSON ASSEMBLY HIFI 1 STEP 10 RXN	10820-610	KIT GIBSON ASSEMBLY ULTRA 10 RXN	10820-790
KIT GIBSON ASSEMBLY HIFI 1 STEP 50 RXN	10820-614	KIT GIBSON ASSEMBLY ULTRA 50 RXN	10820-794
MASTER MIX GIBSON ASSEMBLY HIFI 10 RXN	10820-612	MASTER MIX GIBSON ASSEMBLY ULTRA 10 RXN	10820-792
MASTER MIX GIBSON ASSEMBLY HIFI 50 RXN	10820-616	MASTER MIX GIBSON ASSEMBLY ULTRA 50 RXN	10820-652
CONTROL PSTV GIBSON ASSEMBLY FAST 5 RXN	75997-590	CONTROL PSTV GIBSON ASSEMBLY FAST 5 RXN	75997-590

To place an order or request additional information please contact your local VWR Representative
Complete product information and additional resources are available at vwr.com

References

1. Gibson, D.G. et al. (2009) Nature Methods, 343-345
2. Gibson, D.G. et al. (2010) Nature Methods, 901-903

0524 Lit.No. 200331W

Part number 47712 | Revision 1.0 | Effective 15APR2024