

Resource Summary Report

Generated by [dkNET](#) on Sep 9, 2026

Gibson Assembly

DOI:10.17504/protocols.io.gy5bxy6

Type: Protocol

Proper Citation

Gergana Vandova 2017. Gibson Assembly. protocols.io
[dx.doi.org/10.17504/protocols.io.gy5bxy6](https://doi.org/10.17504/protocols.io.gy5bxy6)

Protocol Information

URL: <https://dx.doi.org/10.17504/protocols.io.gy5bxy6>

Authors: Gergana Vandova

Group: Genomes to Natural Products Network

Summary: Gibson assembly is a simple, robust method for assembling multiple DNA fragments without restriction-ligation cloning. Our group routinely uses this method for assembling multiple fragments of DNA into larger constructs, in one step. We generally use Gibson assembly for assemblies of up to ~5 fragments and final construct size of ~20kb; for larger assemblies we usually use yeast homologous recombination. The method Introduction from Daniel Gibson, et. al., is as follows: 'An isothermal, single-reaction protocol for assembling multiple, overlapping DNA molecules by the concerted actions of a 5'-exonuclease, a DNA polymerase, and a DNA ligase is described. The DNA fragments are first recessed to produce ssDNA overhangs that are specifically annealed, and then they are covalently joined. This assembly protocol can be used to seamlessly construct synthetic and natural genes, genetic pathways, and entire genomes. This method could be a very useful molecular engineering tool.'The original Gibson assembly protocol is here: <http://www.nature.com/protocolexchange/protocols/554>The following protocol has minor modifications/optimizations developed that were developed at the Stanford Genome Technology Center (SGTC). They are marked with an asterisk (*) and the reasoning is in italics.

Version: 3

Publication Date: 2017

Proper Citation: Gergana Vandova 2017. Gibson Assembly. protocols.io
[dx.doi.org/10.17504/protocols.io.gy5bxy6](https://doi.org/10.17504/protocols.io.gy5bxy6)

Record Creation Time: 20210329T220532+0000

Record Last Update: 20210329T221004+0000

Data and Source Information

Source: