

NGS DNA Library Prep Kit (ion torrent platform with index)

Catalog No. 30050S: 48 reactions

Catalog No. 30050L: 96 reactions

Description

The **NGS DNA Library Prep Kit** is developed for construction of high quality libraries for next-generation sequencing (Ion Torrent platform). The kit needs double strand DNA fragments (blunt and/or sticky) as input DNA for NGS library construction, and is compatible with DNA fragments generated from both enzymatic methods and physical methods. Our unique technology increases library conversion rate and eliminates insert concatemer ligation. Library multiplexing up to 12 samples is possible.

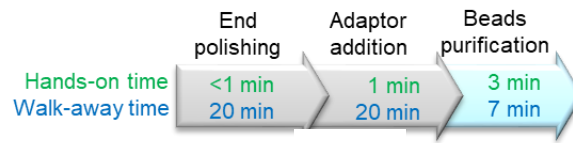


Fig. 1

Features

- Simple: three steps in one tube (Fig.1)
- Fast (Fig.2)
 - Total time: < 1 hr
 - Hands-on time: ~5 min
- Guaranteed quality: higher library conversion efficiency as compared to other kits (Fig. 3)
- Input DNA amount: from 50 ng to 1 ug
- No insert concatemer ligation (Fig. 4)

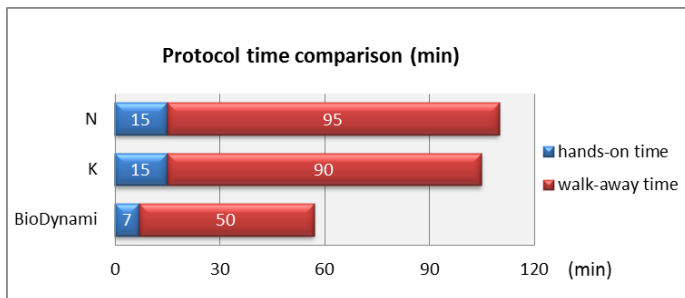


Fig. 2

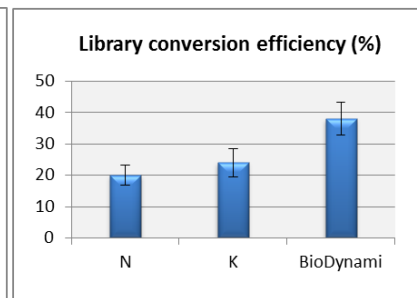


Fig. 3

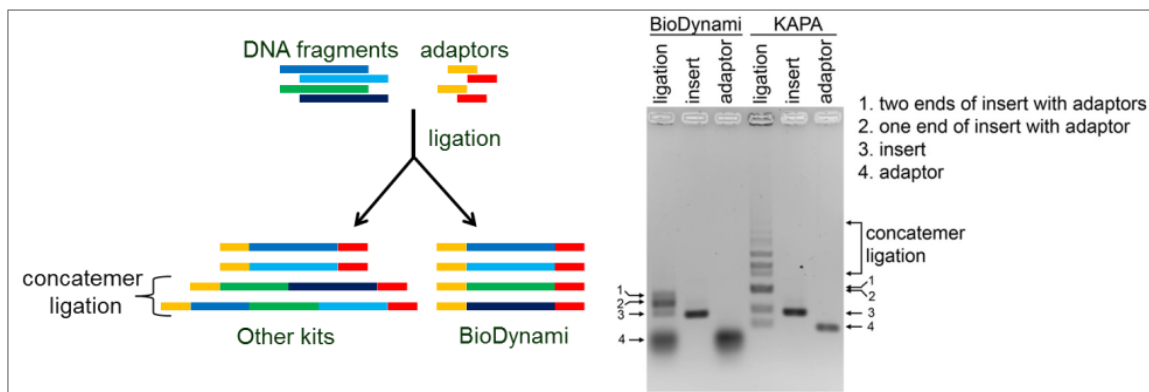


Fig. 4

Component

	Cat.# 30050S	Cat.# 30050L
• DT1 Buffer	192 ul	384 ul
• DT1 Enzyme	192 ul	384 ul
• DT2B Buffer	1152 ul	2304 ul
• DT2 Enzyme	96 ul	192 ul
• Sodium Chloride (2M)*	960 ul	1920 ul
• Index adaptor	16 ul X12	32 ul X12

Storage Condition

- Store kit at -20°C, stable up to 12 months.

Reagent & Equipment Needed (not provided in this kit)

- Magnetic particle concentrator
- PCR thermal cycler
- 96-well PCR plate
- 80% ethanol (prepare before use)
- Sodium Chloride (2 M)*
- Magnetic Beads (BioDynami Cat.# 40051) or equivalent

*Sometimes the tube of Sodium Chloride (2 M) may crack during dry ice shipping. Customers need to prepare Sodium Chloride (2 M) in this case.

Index information

index	sequence
1	CTAAGGTAAC
2	TAAGGAGAAC
3	AAGAGGATTC
4	TACCAAGATC
5	CAGAAGGAAC
6	CTGCAAGTTC
7	TTCGTGATTC
8	TTCCGATAAC
9	TGAGCGGAAC
10	CTGACCGAAC
11	TCCTCGAATC
12	TAGGTGGTTC

Protocol

Step 1: End polishing

- 1) Add the following to one well of a 96-well PCR plate:

Sheared DNA*	42 ul (50 ng~1 ug)
DT1 Buffer	4 ul
<u>DT1 Enzyme</u>	<u>4 ul</u>
Total	50 ul

- 2) Mix by pipetting ten times.
- 3) Incubate at 20°C for 15 min, 70°C for 5 min. Proceed immediately to step 2.

* We recommend purifying the sheared DNA using AMPure XP beads before Step 1. Purifying DNA can improve the quality of the library. We also recommend DNA concentration to be determined by fluorometric methods (picogreen/Qubit) for accuracy.

Step 2: Adaptor addition

- 1) Add the following to Step 1 reaction mixture. Slow pipetting of the viscous DT2 Buffer is needed for precise aliquot. The total reaction volume is 80 ul.

DT2B Buffer	24 ul
Index adaptor	4 ul
<u>DT2 Enzyme</u>	<u>2 ul</u>
Total	80 ul

- 2) Mix by pipetting ten times.
- 3) Incubate at 20°C for 20 min.
- 4) Add **Sodium Chloride (2 M) 40 ul** to the reaction mixture. Proceed immediately to step 3.

Step 3: Beads purification

- 1) Resuspend **Magnetic Beads** and transfer 40 ul to the above reaction mixture, mix by pipetting and incubate for 3 min.
- 2) Load the plate on a magnet, incubate for 2 min, and discard the supernatant carefully.
- 3) Add 180 ul of 80% ethanol, incubate for 30 sec, and discard the supernatant carefully. Remove all residual ethanol without disturbing the beads.
- 4) Remove the plate from the magnet, resuspend the beads in 22 ul of water or Tris-HCl (10 mM).
- 5) Load the plate on the magnet, incubate for 1 min, and transfer 20 ul supernatant (containing library) to a new tube without disturbing the beads.

Attention: PCR prior to sequencing

Amplification of the DNA library created from this kit may be necessary dependent on your project and sequencing platform. Prior to proceeding to PCR or other downstream steps, quantify your library to determine whether the library is enough for your application. Amplify your library according to the instruction from your platform provider.

Attention: Structure of NGS library

NGS DNA library created from this kit is shown below: Sequences with the index adaptor begin with the sequence **TCAG-index-GATC**, followed by the **insert sequence**.



Quality Control

Kit components passed stringent functional quality test.

Product Use Limitation




This product is developed and sold for research purposes and *in vitro* use only. Please refer to BioDynami.com for Material Safety Data Sheet of the product.

Limited Label License

The product is developed and sold exclusively for research purposes and *in vitro* use only. The product or its any individual component has not been tested for use in diagnostics or drug development, and is not suitable for administration to human or animal.

The purchaser of this product is granted a limited, non-transferable right to use the purchased amount of the product only for internal, research purposes for the sole benefit of the purchaser. The buyer cannot sell or otherwise transfer (i) this product (ii) its components or (iii) materials made using this product or its components to a third party or otherwise use this product or its components or materials made using this product or its components for commercial purposes. This product is for internal research purposes only and is not for use in commercial purposes of any kind. "Commercial purposes" includes any activity for which a party receives consideration and may include, but is not limited to, (1) use of the product or its components or derivatives in manufacturing, (2) transfer or sale of vectors made with the product or components or derivatives of the product, (3) use of this product or components or derivatives of the product made therefrom to provide a service, information, or data to a third party in return for a fee or other consideration, or (4) resale of the product or its components or derivatives, whether or not such product or its components or derivatives are resold for use in research. If the purchaser is not willing to accept the limitations of this limited use statement, BioDynami is willing to accept return of the products with a full refund. For information on obtaining additional rights, please contact support@BioDynami.com

BioDynami

-  601 Genome Way, Huntsville, Alabama 35806, USA
-  <https://BioDynami.com>
-  support@BioDynami.com



Oct. 2022