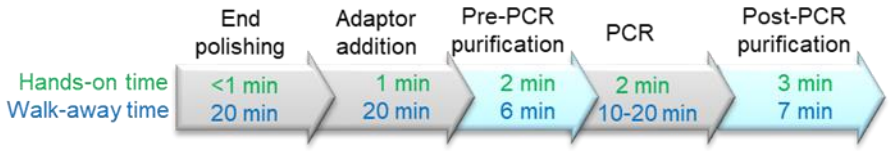
NGS Low Input DNA Library Prep Kit (MGI Platform)

Catalog No.	34024S	34024L
Index type	index	index
Reactions	24 reactions	96 reactions

Description

The **NGS Low Input DNA Library Prep Kit** (MGI platform) was developed for construction of high-quality libraries with low input DNA amount from 1 ng to 400 ng. 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 mechanical methods.



Features

- Fast
  - Total time: 1.5 hrs
  - Hands-on time: 10 min
- Easy procedure
  - Ready-to-use master mix
  - Less reaction components
- Less magnetic beads required: Reduced more than 50%
- Guaranteed quality: Higher library conversion efficiency
- Low input DNA: From 1 ng to 400 ng

Component

Catalog No.	34024S	34024L
DF1 Buffer	72 ul	288 ul
DF1 Enzyme	48 ul	192 ul
DF2M Buffer	336 ul	1344 ul
DF2 Enzyme	24 ul	96 ul
Sodium Chloride (1.67 M)*	432 ul	1728 ul
Index Primers	5 ul X24	5 ul X96
PCR mix	600 ul	2400 ul

*Sometimes the tube of Sodium Chloride (1.67 M) may crack during dry ice shipping. Customers need to prepare Sodium Chloride (1.67 M) in this case.

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 Solution (1.67 M)*
- Magnetic Beads (BioDynami Cat.# 40051) or equivalent

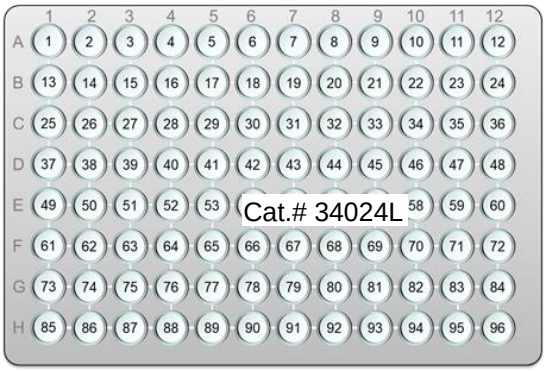
Library and Index Information

Index (Cat.# 34024S and 34024L)

Index ID	Index Sequence	Index ID	Index Sequence	Index ID	Index Sequence
Index #1	GCTTGTTCAG	Index #9	CCGATGACGT	Index #17	GACGCGGTAT
Index #2	AACAAGCACT	Index #10	TTATCTCGAG	Index #18	ACGAGACGTC
Index #3	TTGCCAGTGA	Index #11	AGCCGATACC	Index #19	CTACTCAAGA
Index #4	CGAGTCAGTC	Index #12	GATGACGTTA	Index #20	TGTTATTCCG
Index #5	GATAGTAACG	Index #13	TCGCGATGTC	Index #21	CCGTCACTGA
Index #6	TGAGTGGCTA	Index #14	AGTGACACCA	Index #22	TGACGCAACT
Index #7	CCGTCATTAC	Index #15	GACATTCAAG	Index #23	GTTGTTGCTC
Index #8	ATCCACCGGT	Index #16	CTATCGGTGT	Index #24	AACAAGTGAG

For Cat.# 34024S, primers will be shipped in 8-stripe PCR tubes with index labels at both ends as shown below. For Cat.# 34024L, primers will be shipped in 96-well plates. Below is the index layout.

Cat.# 34024S



Cat.# 34024L

Protocol

Step 1: End polishing

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

Sheared DNA	10 ul (1 ng~400 ng)
DF1 Buffer	3 ul
DF1 Enzyme	2 ul
Total	15 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.

Step 2: Adaptor addition

1) Add the following to Step 1 reaction mixture. Slow pipetting of the viscous DF2M Buffer is needed for precise aliquot.

DF2M Buffer	14 ul
DF2 Enzyme	1 ul
Total	15 ul

2) Mix by pipetting ten times.
3) Incubate at 20°C for 20 min.
4) Add Sodium Chloride (1.67 M) 18 ul to the reaction mixture. Proceed immediately to step 3.

Step 3: Pre-PCR 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. Remove all residual supernatant without disturbing the beads.
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.
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.

Step 4: PCR

1) Mix the following in a PCR plate:

Library	20 ul
Primers	5 ul
PCR mix	25 ul
Total	50 ul

2) Put PCR plate on a thermal cycler, start PCR with the following condition:

Step	Temperature	Time	Cycles
Initial Denaturation	98°C	30 seconds	1
Denaturation	98°C	10 seconds	6-14 cycles***
Annealing/extension	65°C	70 seconds	
Final Extension	65°C	2 minutes	1
Hold	4°C		

*** As a reference:
12-14 cycles for 1-5 ng input;
10-12 cycles for 5-10 ng input;
8-11 cycles for 10-20 ng input;
7-10 cycles for 20-50 ng input;
6-9 cycles for 50-400 ng input.

Step 5: Post-PCR 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.

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.

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About PCR master mix:
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May 2022