Part No.:SOP-013-B02-122

User Manual

Version:4.0

MGIEasy DNA Adapters-96 (Plate) Kit

Cat. No.: 1000005282 (96 RXN)
Kit Version: V1.0

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Manufacturer information

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Revision history

Manual version	Kit version	Date	Description
4.0	V1.0	May. 2024	• Update the manufacturer information • Update the manual style
3.0	V1.0	Mar. 2022	Update Manufacturer LOGO
A1	V1.0	Jan. 2021	Update contact information
A0	V1.0	Feb. 2019	Initial release

Tips Please download the latest version of the manual, and use it with the corresponding kit. Search for the manual by Cat. No. or product name from the following website:

https://en.mgi-tech.com/download/files.html

1 Product overview

1.1 Introduction

MGIEasy DNA Adapters-96 (Plate) Kit is specifically designed for the preparation of the library of MGI sequencing platforms for multiplex sequencing. This kit can be used with a variety of library preparation kits. The kit contains 96 different single barcode adapters that support up to 96 samples for batch processing of library construction and multiplex sequencing. The kit undergoes strict quality control and functional verification to ensure maximum stability and repeatability of library construction, as well as uniformity and accuracy of sequencing data splitting.

1.2 Intended use

This kit is suitable for constructing MGI sequencing libraries with specific MGIEasy library prep kits. If you want to use this kit with library prep kits from other brands, contact MGI Technical Support for suggestions or pre-testing before preparing your formal experiment.

1.3 Applicable sequencing platforms

Sequencing instrument compatibility is dependent on specific MGI library prep kits. Libraries created with this kit can be used on any MGI sequencer.

1.4 Components

MGIEasy DNA Adapters-96 (Plate) Kit consists of 96 different single barcode adapters. For component details, refer to the following table.

Each kit contains an information card. Relevant manuals and SDS files can be downloaded from the MGI website provided on the information card.

Table 1 MGIEasy DNA Adapters-96 (Plate) Kit (96 RXN) (Cat. No.: 1000005282)

Component	Concentration & Quantity	Concentration	Package style
Adapters	10 μL/well × 96	10 μM/L	Plate

1.5 Storage and transportation

MGIEasy DNA Adapters-96 (Plate) Kit

Storage temperature: -25 ℃ to -15 ℃

Transportation temperature: -80 ℃ to -15 ℃

Tips
- Production date and expiration date: refer to the label.
- For dry ice shipments, ensure that there is enough dry ice remaining after transportation.
- With proper transport, storage, and use, all components can maintain complete activity within their shelf life.

1.6 User-supplied materials

Refer to the accompanying library preparation kit instructions or the user-supplied checklist.

1.7 Precautions and warnings

- This product is for research use only, not for in vitro diagnosis. Please read this manual carefully before use.
- Familiarize yourself with the precautions and operation methods of various instruments before performing the experiment.
- This manual aims to provide a standard protocol. Changes can be made for different applications, but changes must be tested prior to starting the protocol.
- It is recommended that you use pipette tips with filters to prevent cross-contamination. Use a new tip each time for pipetting different solutions or samples.
- It is recommended that you use the thermocyclers with heated lids for reactions. Preheat the thermocyclers to reaction temperature before use. If the thermocycler does not allow for lid temperature adjustments, the preset lid temperature of 105 ℃ is sufficient.
- Aerosol contamination may cause inaccurate results. It is recommended that you prepare separate working areas in the laboratory for PCR reaction preparation, PCR reaction, and PCR product cleanup. Use designated equipment for each area and clean the area regularly to ensure a sterile working environment (use 0.5% Sodium Hypochlorite or 10% bleach to clean the working area).
- Avoid skin and eyes contact with samples and reagents. Do not eat or drink the samples and reagents. In case of contact with skin and eyes, rinse immediately with plenty of water and seek medical advice.
- Conform to the law and regulations when disposing of all samples and reagents.

- If you have questions, contact Technical Support: **MGI-service@mgi-tech.com**.

2 Instructions

Tips The adapter provided by the kit is used for the adapter ligation step of library preparation. For the detailed method of use and the input of adapter, refer to the corresponding library preparation kit instructions.

Based on the principles of balanced base composition, adapters should be used in specific groups. Follow the instructions below to use the adapters in proper combinations.

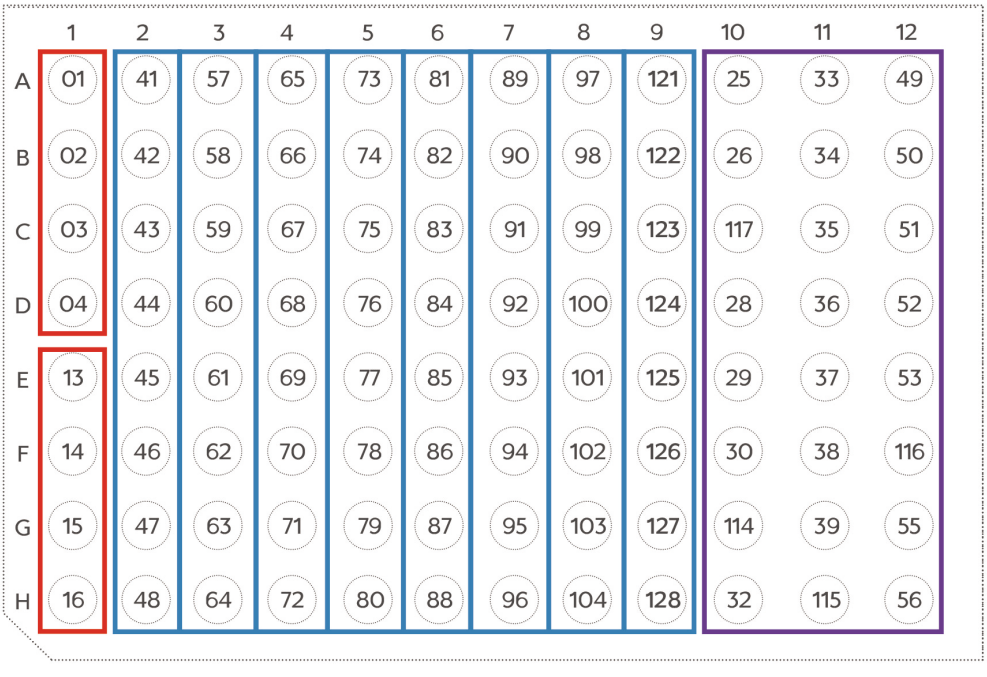

Figure 1 DNA adapters layout and combination instructions

- 2 sets of 4 adapters: Column 1 (01-04, 13-16) (see the red box in the figure above)
- 8 sets of 8 adapters: Columns 2-9 (41-48, 57-64, 65-72, 73-80, 81-88, 89-96, 97-104, and 121-128) (see the blue box in the figure above)
- 1 set of 24 adapters: Columns 10-12 (see the purple box in the figure above)

If the sequencing data output requirement is the same for all samples in a lane, please refer to the table below to organize your barcode adapter combinations.

CAUTION The number of the adapter should not be repeated between samples in one lane.

Table 2 Instructions for DNA Adapters (96 RXN)

Sample/lane	Instruction (Example)
1	• For a set of 4 adapters, add 4 adapters to each sample. For example: 01-04. Mix 4 adapters with equal volume and add the mixture to the sample. • Or, for a set of 8 adapters, add 8 adapters to each sample. For example: 41-48. Mix 8 adapters with equal volume and add the mixture to the sample.
2	• For a set of 4 adapters, add 2 adapters to each sample. For example: 01-04. Mix 01 and 02 with equal volume and add the mixture to sample 1; Mix 03 and 04 with equal volume and add the mixture to sample 2. • Or, for a set of 8 adapters, add 4 adapters to each sample. For example: 41-48. Mix 41-44 with equal volume and add the mixture to sample 1; Mix 45-48 with equal volume and add the mixture to sample 2.
3	1. For samples 1 and 2, use the method for (2 samples/lane) above. 2. For sample 3, use the method for (1 sample/lane) above. Tips Use different adapter sets for samples 1, 2, and 3.
4	• For a set of 4 adapters, add 1 adapter to each sample. For example: 01-04. Add adapters 01, 02, 03, 04 to samples 1, 2, 3, 4, in that order. • Or, for a set of 8 adapters, add 2 adapters to each sample. For example: 41-48. Mix 41-42, 43-44, 45-46, and 47-48 with equal volume. Add the mixture to sample 1, 2, 3, 4, in that order.
5	1. For samples 1-4, use the method for (4 samples/lane) above. 2. For sample 5, use the method for (1 sample/lane) above. Tips Use different adapter sets for samples 1-4 and 5.
6	1. For samples 1-4, use the method for (4 samples/lane) above. 2. For samples 5-6, use the method for (2 sample/lane) above. Tips Use different adapter sets for samples 1-4 and 5-6.

Sample/lane	Instruction (Example)
7	1. For samples 1-4, use the method for (4 samples/lane) above. (Use the first adapter set) 2. For samples 5-6, use the method for (2 samples/lane) above. (Use the second adapter set) 3. For sample 7, use the method for (1 sample/lane) above. (Use the third adapter set) Tips Use different adapter sets for samples 1-4, samples 5-6, and sample 7.
8	• For a set of 8 adapters, add 1 adapter to each sample. For example: 41-48. Add adapters 41-48 to samples 1 - 8, in that order.
8n+x (n=1 or 2, x=1-8, total 9-24)	Perform the following 3 steps: 1. For samples 1-8, ▪ Use the method for (8 samples/lane) above. ▪ Or, separate into 2 groups of 4 and use the method for (4 samples/lane) above for each group. 2. For samples 9-8n, separate samples into groups of 8, and use the method for (8 samples/lane) above. 3. For samples 8n+1 - 8n+X, according to the value of X, use the methods above for 1-8 sample/lane accordingly. Tips Use different adapter sets for steps 1, 2, and 3.
8n+x (3≤n<11, x=1-8, total 25-96)	Perform the following 3 steps: 1. For samples 1-24, use a set of 24 adapters and add 1 adapter to each sample. 2. For samples 25-8n, separate the samples into groups of 8, and use the method for (8 samples/lane) above. 3. For samples 8n+1 - 8n+X, according to the value of X, use the methods above for 1-8 sample/lane accordingly. Tips Use different adapter sets for steps 1, 2, and 3.

For situations in which sequencing data output requirements are different among samples, any sample with a data output of more than 20% for each lane should use a separate set of adapters.

For example, 9 samples are pooled into one lane, one sample of which requires 30% of the total data output.

1. 8 samples may use adapters (41-48).
2. The final sample should use a full adapter set instead of using only a single adapter. (For example: adapter set (01-04) or (13-16)).