MGIEasy

DNA Adapters-96 (Plate) kit User Manual

Cat. No.: 1000005282 (96 RXN)

Kit Version: V1.0

Manual Version: A1

Revision History

Manual Version	Kit Version	Date	Description
A1	V1.0	Jan. 2021	• Update contact information.
A0	V1.0	Feb. 2019	• Initial release.

Note: Please download the latest version of the manual and use it with the corresponding kit.

Search manual by Cat. No. or product name from website:

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

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Chapter 1 Product Description

1.1 Introduction

MGIEasy DNA Adapters-96 (Plate) kit is specifically designed for the preparation of the library of high-throughput sequencing platforms from MGI for multiplex sequencing. This kit can be used with a variety of library preparation kits. The kit contains 96 different Barcode Adapters that support up to 96 samples for batch processing of library construction and multiplex sequencing. The kit undergoes rigorous 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 Contents

MGIEasy DNA Adapters-96 (Plate) kit consists 96 different Barcode Adapters. Further information on layout, Cat. No, concentration, Specifications and package style are listed below.

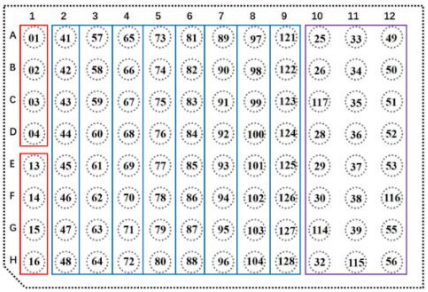

Figure 1 MGIEasy DNA Adapters-96 (Plate) Adapters layout

Table 1 MGIEasy DNA Adapters-96 (Plate) Adapters (96 RXN)

contents	Cat. No	specification	concentration	package style
Adapters	1000005282	96 × 10 μL	10 μM	plate

1.3 Storage Conditions and Shelf Life

MGIEasy DNA Adapters-96 (Plate) Adapters

- Transport Conditions: transported in dry ice and ensure that an abundance of dry ice remains after transportation.
- Storage Temperature: -25°C-18°C.
- Expiration Date: refer to the label.
- Performance of products is guaranteed until the expiration date, under appropriate transport, storage, and usage conditions

1.4 Equipment and Materials Required but not Provided

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

1.5 Precautions and Warnings

Platform Compatibility

MGI high-throughput sequencing platform series.

Before You Use

- The kit was developed to meet requirements for batch processing of library construction and multiplex sequencing. We selected the best adapter combination based on the principle of balanced base composition. However, the number of Barcode Adapters are not continuous. For optimal performance, please carefully read instructions.
- Our adapters are double stranded. Please do not place above room temperature to avoid structural changes such as denaturation, which might affect performance.
- Before use, please centrifuge to collect liquid to the bottom of plates, pierce the film to pipette solutions for first use. After use, please transfer the remaining reagents to individual 1.5 mL tubes or 0.2 mL PCR tubes, label and store at -20°C.
- Adapters from other MGI Library Prep Kits (number 501-596) are designed differently and incompatible for mixed use. Mixed use will cause errors in barcode demultiplexing in data analysis procedures.
- The Adapter number of this kit overlaps with the MGIEasy DNA Adapters-16 (Tube) kit. The Adapters with the same number in the two kits have the same base sequence and cannot be sequenced in the same lane.

Chapter 2 Workflow

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

2.1 Instruction

Based on the principles of balanced base composition, Adapters must be used in specific groups. Please follow the instructions bellow to use Adapters in proper combination.

2 sets of 4 Adapters: Column 1 (01-04, 13-16) (see the red box in Figure 1)

8 sets of 8 Adapters: Column 2-9 (41-48, 57-64, 65-72, 73-80, 81-88, 89-96, 97-104 and 121-128) (see the blue box in Figure 1)

1 set of 24 Adapters: Column 10-12 (see the purple box in Figure 1)

Assuming data output requirement is the same for all samples in a lane, please refer to the Table 2 below to organize your Barcode Adapter combinations.

Table 2 MGIEasy DNA Adapters-96 (Plate) Kit Instruction

Sample/lane	Instruction (Example)
1	1. Take a set of 4 Adapters (e.g. 01-04), mix 4 Adapters with equal volumes, then add the mixture to the sample. Or 2. Take a set of 8 Adapters (e.g. 41-48), mix 8 Adapters with equal volumes, then add the mixture to the sample.
2	1. Take a set of 4 Adapters (e.g. 01-04), mix Adapters with equal volumes in pairs to obtain 2 mixtures of equal volumes. Add 1 mixture to one sample. (e.g. Mix 01 & 02, then add to sample 1; Mix 03 & 04, then add to sample 2) Or 2. Take a set of 8 Adapters (41-48), mix Adapters with equal volumes in groups of 4 to obtain 2 mixtures of equal volumes. Add 1 mixture to one sample. (e.g. Mix 41-44, then add to sample 1; Mix 45-48, then add to sample 2)
3	For sample 1&2, use the method for (2 samples/lane) above. For sample 3, use the method for (1 sample/lane) above. Note that you should use different Adapter sets for sample 1,2 and 3.
4	1. Take a set of 4 Adapters (e.g. 01-04), add 1 Adapter to each sample in an equal volume. (e.g. Respectively add Adapters 01, 02, 03, 04 to samples 1, 2, 3, 4.) Or 2. Take a set of 8 Adapters (41-48), mix Adapters with equal volumes in pairs to obtain

	4 mixtures of equal volumes. Add 1 mixture to each sample. (e.g. Mix 41-42, 43-44, 45-46, 47-48, then add respectively to samples 1, 2, 3, 4.)
5	For samples 1-4, use the method for (4 samples/lane) above. For sample 5, use the method for (1 sample/lane) above. Note that you should use different Adapter sets for sample 1-4 and 5.
6	For samples 1-4, use the method for (4 samples/lane) above. For sample 5-6, use the method for (2 sample/lane) above. Note that you should use different Adapter sets for sample 1-4 and 5-6.
7	1) For samples 1-4, use the method for (4 samples/lane) above. (Use 1st Adapter set) 2) For samples 5-6, use the method for (2 samples/lane) above. (Use 2nd Adapter set) 3) For sample 7, use the method for (1 sample/lane) above. (Use 3rd Adapter set) Note that you should use different Adapter sets for sample 1-4, sample 5-6 and sample 7.
8	Take a set of 8 Adapters (e.g. 41-48), add 1 Adapter to each sample in an equal volume.
8n+x (n=1,2, x=1-8, Total 9-24)	Follow these 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. Remember to use different Adapter sets. Note that you should use different Adapter sets for steps 1), 2) and 3).
8n+x (3≤n<11, x=1-8, Total 25-96)	Follow these 3 steps: 1) For samples 1-24, take a set of 24 Adapters and add 1 Adapter for each sample in an equal volume. 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. Remember to use different Adapter sets. Note that you should use different Adapter sets for steps 1), 2) and 3).

In cases that data output requirements are different among samples, any sample with a data output of more than 20% for each lane must use a separate set of Adapters. For example, 9 samples are pooled into 1 lane, one of which requires 30% of the total data output. In this case, the other 8 samples may use

Adapters (97-104), whereas the final sample must use a full Adapter set instead of using only a single Adapter (e.g. Adapter set (01-04) or (13-16)).

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