GDS Fragmentation & End Prep Module

Instruction for Use

【Product Name】

GDS Fragmentation & End Prep Module

【Cat. No./Spec.】

K023-A (24 rxns); K023-B (96 rxns)

【Product Description】

GDS Fragmentation & End Prep Module is designed for library construction of high-throughput sequencing platform. The module combines fragmentation of intact DNA, end repair and dA tailing, reducing operation and reaction time and the amount of template. 100 pg ~ 500 ng DNA template can be efficiently fragmented with 5' phosphorylated 3' dA-tailed ends. This product contains the enzymes and buffers required for the reaction, easy to use, and compatible with automatic library preparation equipment.

【Components】

Component	K023-A (24 rxns)	K023-B (96 rxns)
GDS FEP Enzyme Mix	240 μL	2×480 μL
GDS FEP Buffer	120 μL	480 μL
Neutralization Buffer	120 μL	480 μL

【Storage Condition & Shelf Life】

All reagents should be stored at -20°C. The product is valid for 12 months.

【Application】

Fragmentation, end repair and dA-tailing in dsDNA library construction.

【Protocol】

1. Determine the solvent composition of template DNA, if no EDTA, proceed directly to Step 2; If EDTA is contained, 2.2X magnetic beads should be used for purification, or a corresponding volume of Neutralization Buffer should be added according to the content of EDTA in the following table for Neutralization:

EDTA Conc.	Volume of Neutralization Buffer
1 mM	5 μL
0.8 mM	4 μL
0.6 mM	3 μL
0.5 mM	2.5 μL
0.4 mM	2 μL
0.2 mM	1 μL
0.1 mM	0.5 μL
<0.1 mM	0 μL

2. Ensure that all reagents are completely thawed. Place on ice until use. Prepare the following reaction in a 200 μL PCR tube:

Reagents	Volume
Input DNA	X μL
GDS FEP Buffer	5 μL
GDS FEP Enzyme Mix	10 μL
ddH_2O	To 50 μL

3. Vortex the reaction for 5 seconds and briefly spin in a microcentrifuge.

4. In a thermal cycler, with the heated lid set to 105°C, run the following program:

Temperature	Time
37°C	5~30 min *
65°C	30 min
4°C	hold

* Use the chart below to determine the incubation time required to generate the desired fragment sizes:

Fragment Size	Time
150 bp	20-30 min
250 bp	15-20 min
350 bp	10-15 min
550 bp	6-10 min

5. Adapter ligation directly as soon as possible to avoid excessive DNA fragmentation.

【Library Preparation Module】

GDSBio offers the following DNA and RNA library construction modules that can be used in combination for high-quality library preparation:

Module	Product Name	Cat. No./Spec.
cDNA First Strand Synthesis	GDS RNA First Strand Synthesis Module	K020-A/24 rxns K020-B/96 rxns
Directional cDNA Second Strand Synthesis	GDS Directional RNA Second Strand Synthesis Module	K021-A/24 rxns K021-B/96 rxns
Non-Directional cDNA Second Strand Synthesis	GDS Non-Directional RNA Second Strand Synthesis Module	K022-A/20 rxns K022-B/100 rxns
Fragmentation & End Repair	GDS Fragmentation & End Prep Module	K023-A/24 rxns K023-B/96 rxns
Fragmentation	GDS dsDNA Fragmentase	K024-A/50 rxns K024-B/250 rxns
End Repair/dA-Tailing	GDS End Preparation Module	K025-A/24 rxns K025-B/96 rxns
Adapter Ligation	GDS Ligation Module	K026-A/24 rxns K026-B/96 rxns
Amplification	HIFI Library PCR Master Mix	K007-A/40 rxns K007-B/400 rxns K007-C/2000 rxns
Cleanup/Size Selection	GDSPure DNA Selection Magbeads	NC1011/5 mL NC1012/60 mL NC1013/450 mL

This product is for research use only.