CUTANA™ Quick Cleanup DNA Purification Kit

Catalog No	14-0052	**Kit Version**	v1
Lot No	24050001-81	**Pack Size**	48 CUT&RUN **-OR-** 96 CUT&Tag Reactions

DESCRIPTION

The CUTANA™ Quick Cleanup DNA Purification Kit can be used to purify CUT&RUN or CUT&Tag DNA and remove unwanted adapter-/primer-dimers from these reactions. Unlike many kits that purify DNA using spin columns, this kit uses SPRI paramagnetic beads for streamlined, higher throughput workflows easily integrated into CUTANA™ genomic mapping assays. Depending on the application, various SPRI bead:DNA ratios are added to capture target DNA.

In **CUT&RUN**, pAG-MNase cleaves DNA proximal to antibody-labeled chromatin, releasing it into the supernatant. It is imperative to recover the highest DNA yield possible from the supernatant; therefore, a higher bead:DNA ratio is added to span a wide range of DNA fragment lengths. This kit includes sufficient volume to perform 48 total **CUT&RUN** reactions at an empirically optimized higher bead ratio.

In **CUT&Tag**, pAG-Tn5 cleaves antibody-bound chromatin and simultaneously ligates adapter DNA, resulting in longer DNA fragments. Further, in the EpiCypher CUTANA™ Direct-to-PCR **CUT&Tag** workflow, indexing PCR is used to amplify next-generation sequencing (NGS) libraries directly from the reaction mixture prior to DNA purification. In this case, a lower bead ratio is ideal for preferable enrichment of longer DNA fragments and selective cleanup of sequencing libraries. This kit includes sufficient volume to perform 96 total **CUT&Tag** reactions at an empirically optimized lower bead ratio.

This kit can also be used to cleanup NGS libraries by removing contaminating small fragments such as adapter dimers in **CUT&RUN** (~150 bp) and primer dimers in **CUT&Tag** (~25-75 bp).

KIT CONTENTS

Item	Cat. No.
8-strip Tubes	10-0009d
0.1X TE Buffer	21-1025d
SPRIselect Reagent from Beckman Coulter, Inc.	21-1405d

TECHNICAL INFORMATION

Storage

Store at room temperature. Stable for 1 year upon date of receipt.

Instructions for Use

This kit contains sufficient reagents to purify 48 CUT&RUN reactions **-OR-** 96 CUT&Tag reactions. A lower bead:DNA ratio is required to purify CUT&Tag DNA versus CUT&RUN DNA, therefore allowing for more CUT&Tag purifications. This kit can also be used to cleanup NGS libraries by removing adapter dimers in CUT&RUN and primer dimers in CUT&Tag. **See Kit Manual corresponding to Kit Version 1 for detailed protocols.**

VALIDATION DATA

CUT&RUN Methods

CUT&RUN was performed using the CUTANA™ CUT&RUN Protocol (epicypher.com/protocols) starting with 500k K562 cells with 0.5 µg of either IgG (EpiCypher 13-0042), H3K4me3 (EpiCypher 13-0060), H3K27me3 (EpiCypher 13-0055), or 0.125 µg of CTCF (EpiCypher 13-2014) antibodies. CUT&RUN DNA was purified using the CUTANA™ Quick Cleanup DNA Purification Kit v1 and libraries were prepared with the CUTANA™ CUT&RUN Library Prep Kit v1 (EpiCypher 14-1001/14-1002).

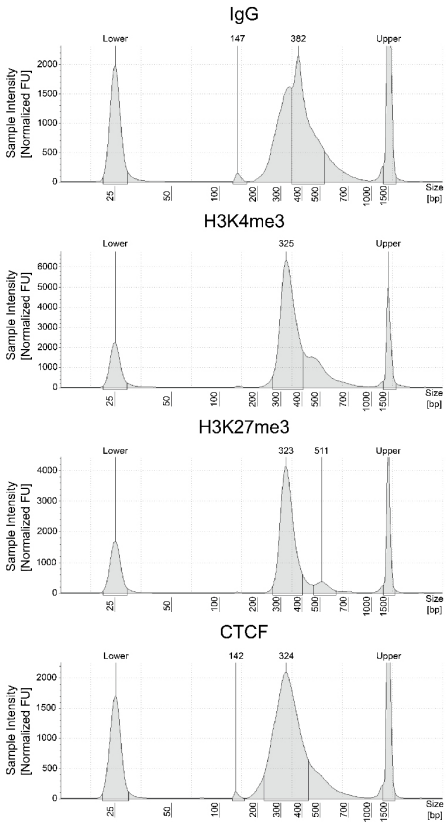

FIGURE 1 CUT&RUN DNA fragment size distribution analysis. CUT&RUN was performed as described above. CUT&RUN DNA was purified using the CUTANA™ Quick Cleanup DNA Purification Kit. Purified CUT&RUN DNA was used to prepare NGS sequencing libraries that were analyzed by Agilent TapeStation®. This analysis confirmed that the CUTANA™ Quick Cleanup DNA Purification Kit successfully enriched mononucleosomal-sized DNA in CUT&RUN (~300 bp peaks represents 150 bp nucleosomes + sequencing adapters).

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