Store at -20°C

CUT&RUN 4X Stop Buffer

#48105

1 mL

Support: +1-978-867-2388 (U.S.)
www.cellsignal.com/support

Orders: 877-616-2355 (U.S.)
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New 02/21

For Research Use Only. Not For Use In Diagnostic Procedures.

Description: The CUT&RUN 4X Stop Buffer provides enough reagent to support 24 CUT&RUN assays. This product is formulated for optimal performance in the CUT&RUN assay and each lot is tested and validated using the CUT&RUN Assay Kit #86652. This product should be diluted to 1X using nuclease-free water and an appropriate amount of Digitonin Solution #16359 and RNAse A (10 mg/ml) #7013 should be added right before use. Addition of Spike-In DNA is optional.

Background: Like the chromatin immunoprecipitation (ChIP) assay, Cleavage Under Targets and Release Using Nuclease (CUT&RUN) is a powerful and versatile technique used for probing protein-DNA interactions within the natural chromatin context of the cell (1-4). CUT&RUN provides a rapid, robust, and true low cell number assay for detection of protein-DNA interactions in the cell. Unlike the ChIP assay, CUT&RUN is free from formaldehyde cross-linking, chromatin fragmentation, and immunoprecipitation, making it a much faster and more efficient method for enriching protein-DNA interactions and identifying target genes. CUT&RUN can be performed in less than one day, from live cells to purified DNA, and has been shown to work with as few as 500-1,000 cells per assay (1,2). Instead of fragmenting all of the cellular chromatin as done in ChIP, CUT&RUN utilizes an antibody-targeted digestion of chromatin, resulting in much lower background signal than seen in the ChIP assay. As a result, CUT&RUN requires only 1/10th the sequencing depth that is required for ChIP-seq assays (1,2). Finally, the inclusion of simple spike-in control DNA allows for accurate quantification and normalization of target-protein binding that is not possible with the ChIP method. This provides for effective normalization of signal between samples and between experiments.

Storage: Store CUT&RUN 4X Stop Buffer at -20°C. This product is stable for at least 12 months.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Directions for Use: For the CUT&RUN assay, we recommend adding 37.5 µl CUT&RUN 4X Stop Buffer, 3.75 µl Digitonin Solution #16359, and 0.75 µl RNAse A (10 mg/ml) #7013 to 108 µl nuclease-free water (150 µl per reaction) right before use. Then incubate with the sample at 37°C for 10 min. An appropriate amount of Sample Normalization Spike-In DNA can be added to CUT&RUN 4X Stop Buffer, if desired.

Background References:

(1) Skene, P.J. and Henikoff, S. (2017) *Elife* 6, pii: e21856. doi: 10.7554/eLife.21856.

(2) Skene, P.J. et al. (2018) *Nat Protoc* 13, 1006-19.

(3) Meers, M.P. et al. (2019) *Elife* 8, pii: e46314. doi: 10.7554/eLife.46314.

(4) Meers, M.P. et al. (2019) *Mol Cell* 75, 562-575.e5.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.