

Store at
-20°C

100X Spermidine

#27287

1.3 mL



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TECHNOLOGY®

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New 01/21

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

Description: 100X Spermidine is offered to conveniently provide additional spermidine for use with the CUT&RUN Assay Kit #86652. The CUT&RUN Assay Kit #86652 provides all the reagents required for performing the recommended number of Cleavage Under Targets & Release Using Nuclease (CUT&RUN) assays; however, there are instances where extra spermidine is desired. This product can be added to the CUT&RUN Antibody Binding Buffer #15338 or CUT&RUN 10X Wash Buffer #31415 right before use, or be used in other assays as needed. Please keep on ice during use and store at -20°C when finished for the day.

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 100X Spermidine 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, use this product as a 100X stock, as directed in the CUT&RUN Assay Kit #86652 protocol.

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.