Description: The CUT&RUN Antibody Binding Buffer provides enough reagent to support 48 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 #68652. An appropriate amount of Digitonin Solution #16359, 100X Spermidine #27287, and Protease Inhibitor Cocktail (200X) #7012 should be added to this product right before use. Please keep on ice during use.

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 Antibody Binding Buffer at 4°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 1 μl 100X Spermidine #27287, 0.5 μl Protease Inhibitor Cocktail (200X) #7012, and 2.5 μl Digitonin Solution #16359 to 96 μl CUT&RUN Antibody Binding Buffer (100 μl per reaction) right before use. Please keep on ice during use. The volume of Digitonin Solution #16359 in the CUT&RUN Antibody Binding Buffer can be adjusted based on the specific cell line.

Background References:

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