

Store at
4°C

Concanavalin A Magnetic Beads and Activation Buffer



Cell Signaling
TECHNOLOGY®

#93569

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New 06/20

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

Products Included	Product #	Quantity	Storage Temp
Concanavalin A Magnetic Beads	82307	240 µl	4°C
Concanavalin A Bead Activation Buffer	91275	5 ml	4°C

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions and additional application protocols.

Description: The Concanavalin A Magnetic Beads and Activation Buffer kit provides enough reagents to support 24 CUT&RUN assays. This product is tested and validated using the CUT&RUN Assay Kit #86652. This product should be stored at 4°C. Please do not freeze the Concanavalin A Magnetic Beads!

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 500-1000 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 at 4°C. Do not freeze the Concanavalin A Magnetic Beads! *This product is stable for at least 6 months.*

Directions for Use: For the CUT&RUN assay, we recommend using 10 µl Concanavalin A Magnetic Beads per reaction. Before use, the Concanavalin A Magnetic Beads should be washed 2 times with 10X volume of Concanavalin A Bead Activation Buffer and resuspended in a volume of Concanavalin A Bead Activation Buffer equal to the initial volume of bead suspension. Activated beads should be used within one day.

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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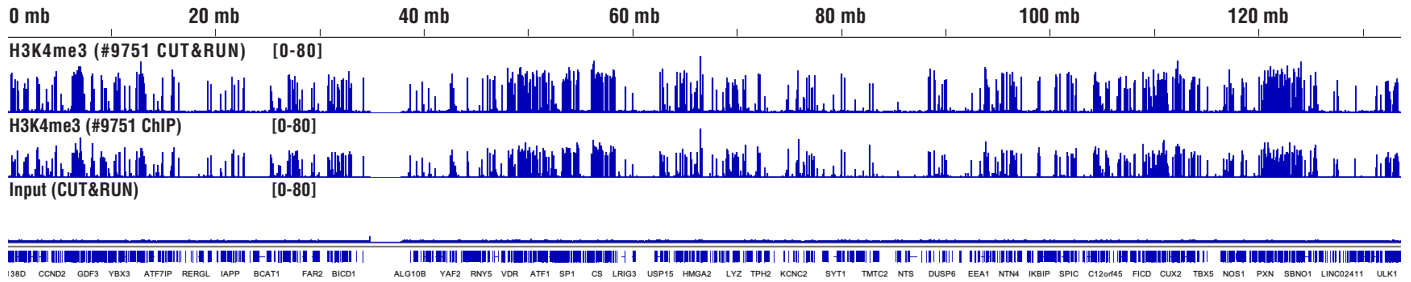
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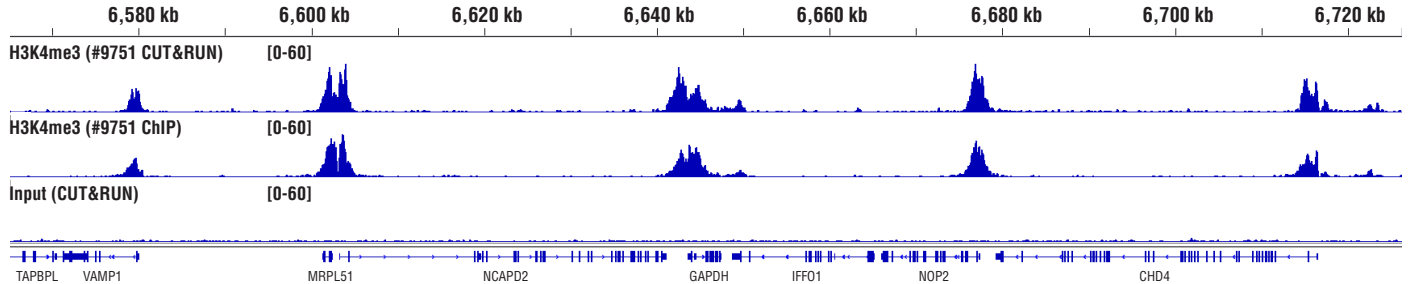
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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide Species Cross-Reactivity: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken 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.

Panel A

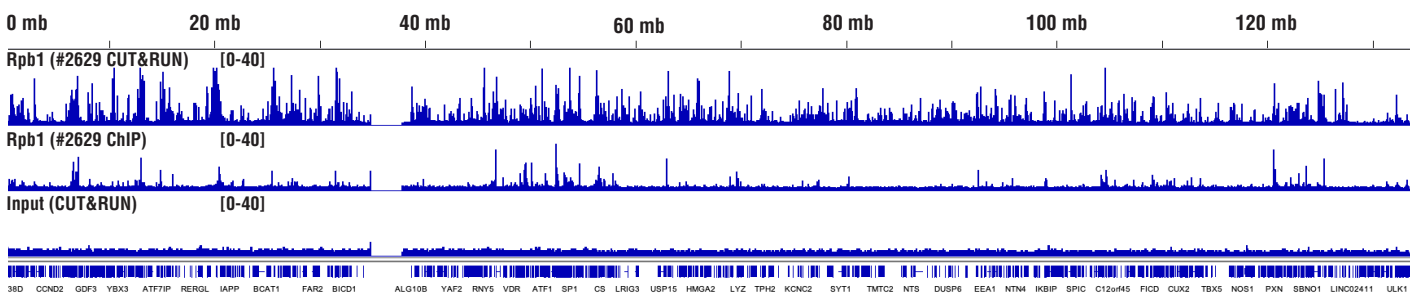


Panel B

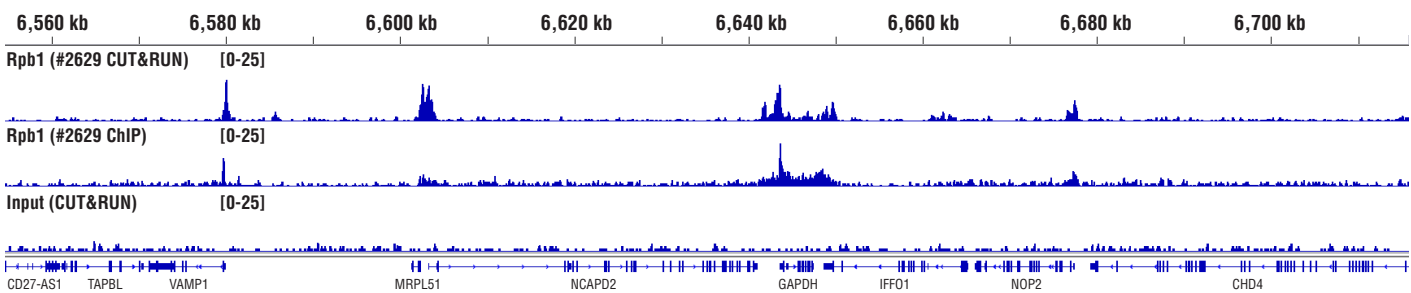


CUT&RUN and ChIP assays were performed with HCT 116 cells and Tri-Methyl-Histone H3 (Lys4) (C42D8) Rabbit mAb #9751. DNA Libraries were prepared using SimpleChIP® ChIP-seq DNA Library Prep Kit for Illumina® #56795. Panel A compares enrichment of H3K4me3 across chromosome 12 (upper), while Panel B compares enrichment at the GAPDH gene (lower), a known target of H3K4me3. The input tracks are from the CUT&RUN input sample.

Panel A



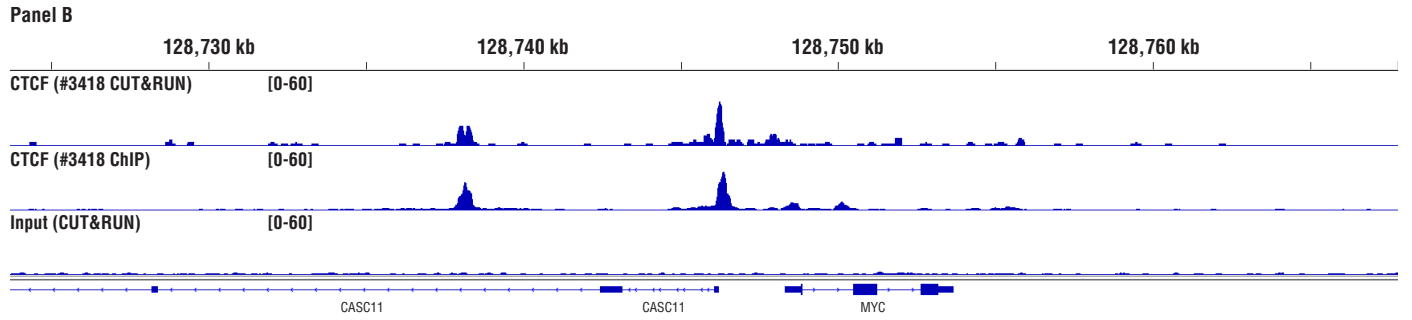
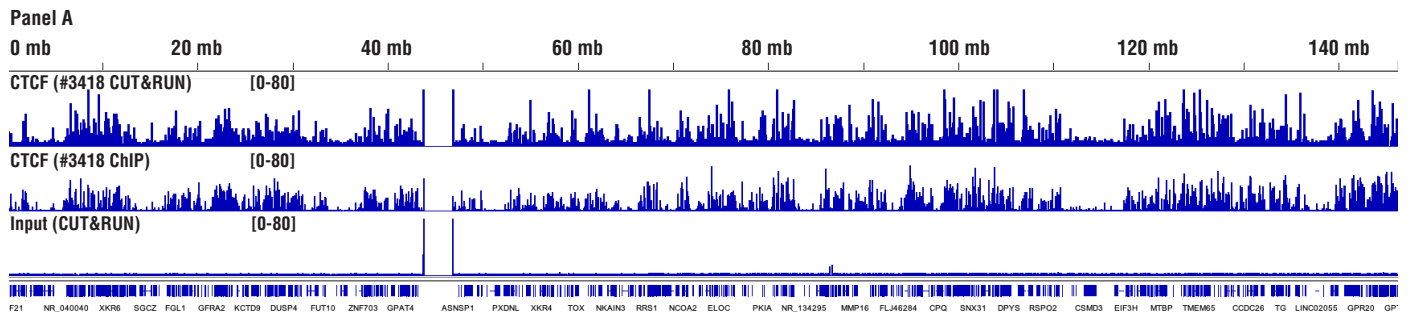
Panel B



CUT&RUN and ChIP assays were performed with HeLa cells and Rpb1 CTD (4H8) Mouse mAb #2629. DNA Libraries were prepared using SimpleChIP® ChIP-seq DNA Library Prep Kit for Illumina® #56795. Panel A compares enrichment of Rpb1 across chromosome 12 (upper), while Panel B compares enrichment at the GAPDH gene (lower), a known target of Rpb1. The input tracks are from the CUT&RUN input sample.

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CUT&RUN and ChIP assays were performed with HCT 116 cells and CTCF (D31H2) XP[®] Rabbit mAb #3418. DNA Libraries were prepared using SimpleChIP[®] ChIP-seq DNA Library Prep Kit for Illumina[®] #56795. Panel A compares enrichment of CTCF across chromosome 8 (upper), while Panel B compares enrichment at the MYC gene (lower), a known target of CTCF. The input tracks are from the CUT&RUN input sample.

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