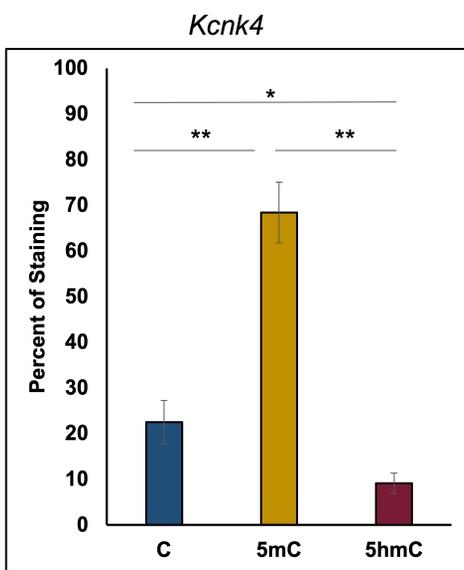
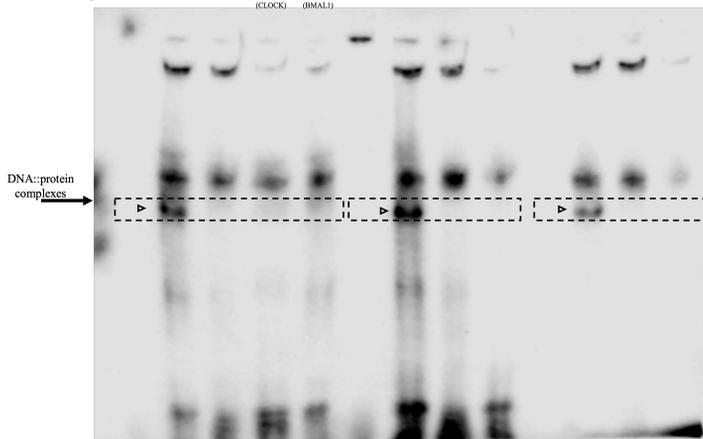


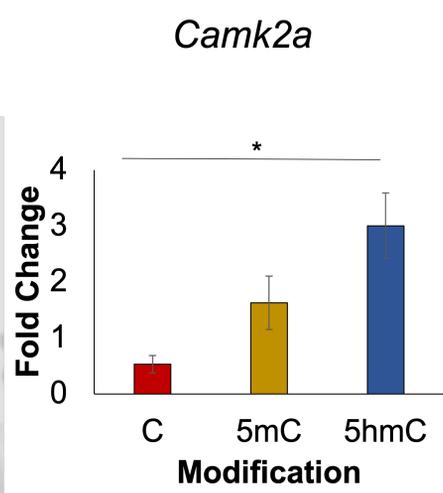
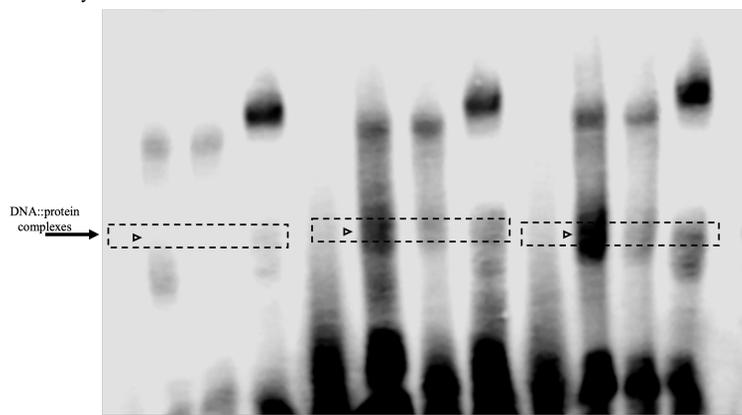
A

Free <i>Kcnk4</i> probes	+	+	+	+	-	-	-	-	-	-	-	-
5mC <i>Kcnk4</i> probes	-	-	-	-	+	+	+	+	-	-	-	-
5hmC <i>Kcnk4</i> probes	-	-	-	-	-	-	-	-	+	+	+	+
Nuclear extracts	-	+	+	+	+	-	+	+	+	-	+	+
Unlabeled probes	-	-	+	-	-	-	-	+	-	-	+	-
Antibody	-	-	-	+	+	-	-	+	-	-	-	+



B

Free <i>Camk2a</i> probes	+	+	+	+	-	-	-	-	-	-	-	-
5mC <i>Camk2a</i> probes	-	-	-	-	+	+	+	-	-	-	-	-
5hmC <i>Camk2a</i> probes	-	-	-	-	-	-	-	-	+	+	+	+
Nuclear extracts	-	+	+	+	-	+	+	+	-	+	+	+
Unlabeled probes	-	-	+	-	-	-	+	-	-	-	+	-
Antibody	-	-	-	+	-	-	+	-	-	-	-	+



Supplemental Fig S10: Functional assays reveal DNA modifications exhibit unique binding efficiencies for specific transcription factors. Electromobility shift assays with hippocampal lysates and antibodies against transcription factors specifically effected by 5mC (A) and 5hmC (B) are shown. Lysate shift (lanes 2, 6, and 10), cold competition (lanes 3, 7, and 11), and supershift (lanes 4, 8, and 12) of DNA probes corresponding to *Kcnk4* (A) and *Camk2a* (B). Biotinylated DNA probes contained either an unmodified probe (lanes 1-4), a methylated Probe (lanes 5-8), or a hydroxymethylated probe (lanes 9-12). Regions containing bands of interest are highlighted (dashed boxes) with DNA:protein complexes. Quantifications of biotinylated DNA probe intensities are shown with bar-plots on the right. The DNA modifications (x-axis) and mean biotinylated DNA probe intensity (y-axis) are depicted +/- SEM. The asterisk (*) denotes a significant decrease in binding (* *P*-value <0.05; *** *P*-value <0.001).