

Structure, Volume 27

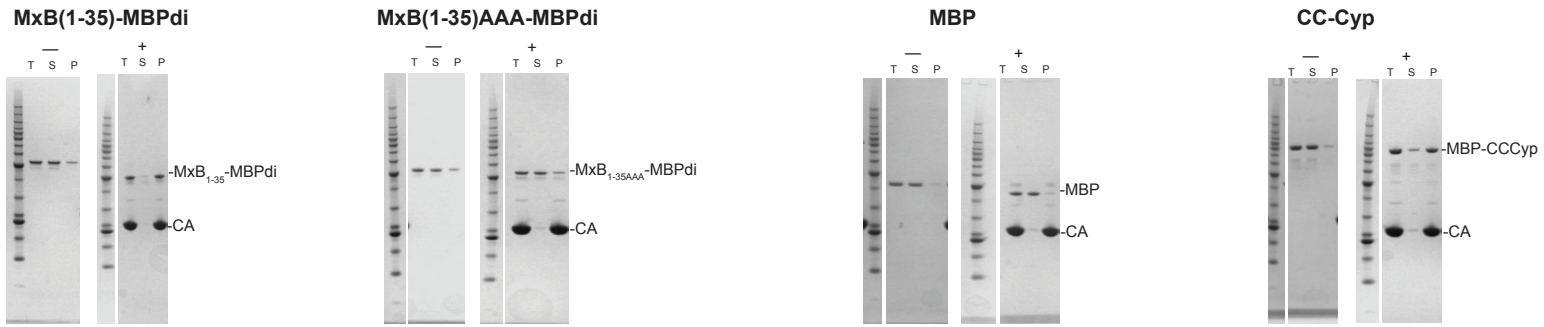
Supplemental Information

**MxB Restricts HIV-1 by Targeting
the Tri-hexamer Interface of the Viral Capsid**

**Sarah Sierra Smaga, Chaoyi Xu, Brady James Summers, Katherine Marie
Digianantonio, Juan R. Perilla, and Yong Xiong**

Figure S1. Full pelleting assay with controls and MxB salt-dependence. Related to Figure 1.
 Full gels in triplicate for pelleting assays in Figure 1C and Figure 1D (used for quantification in Figure 1E).

Full gels: Figure 1C



Full gels: Figure 1D and E

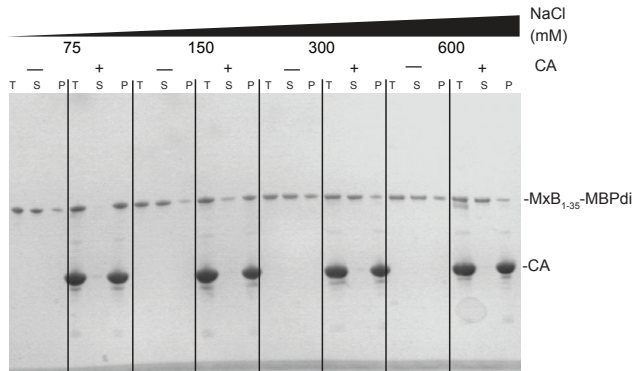
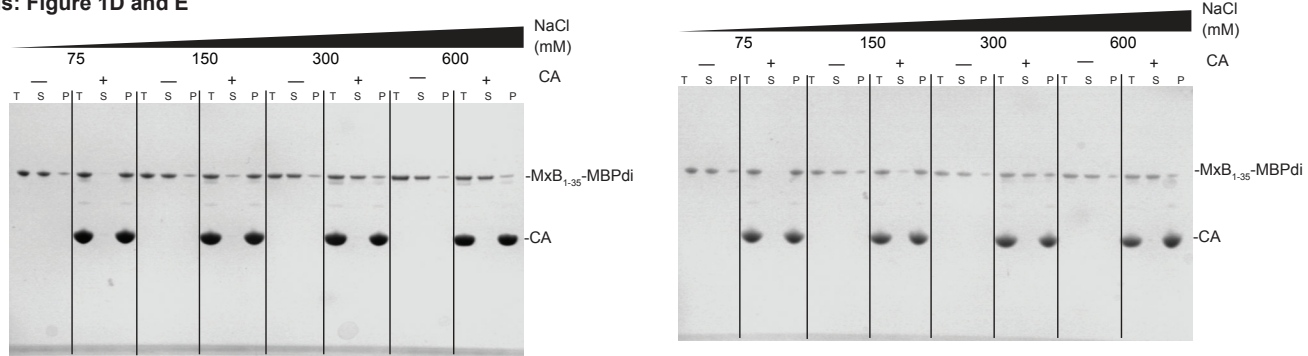


Figure S2. Mapping the MxB binding site using CA mutations. Related to Figure 2.

A. Electron micrographs of CA tubes used in Figure 2 copelleting assays;

B. Full gels in triplicate of MxB copelleting assays performed in Figure 2

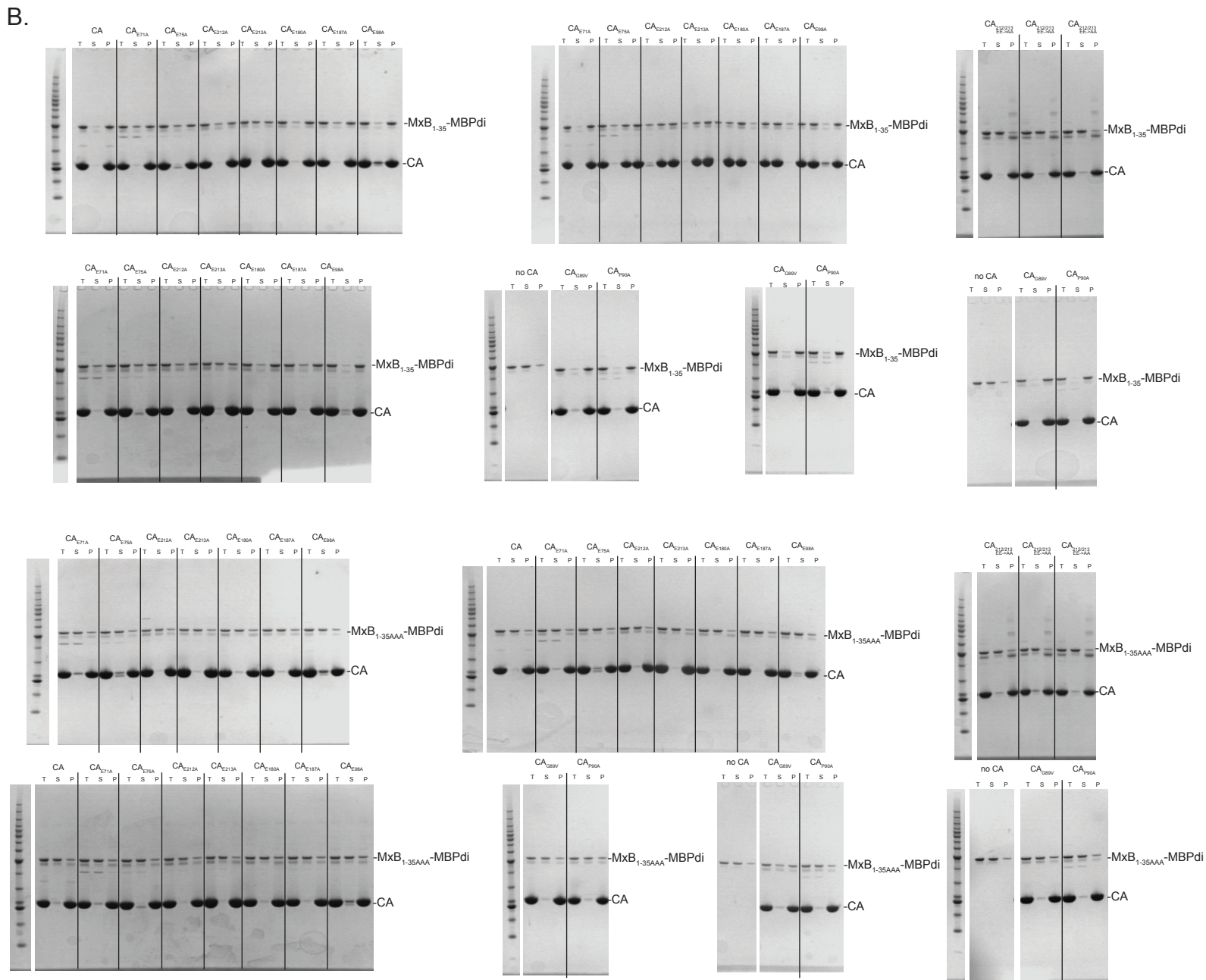
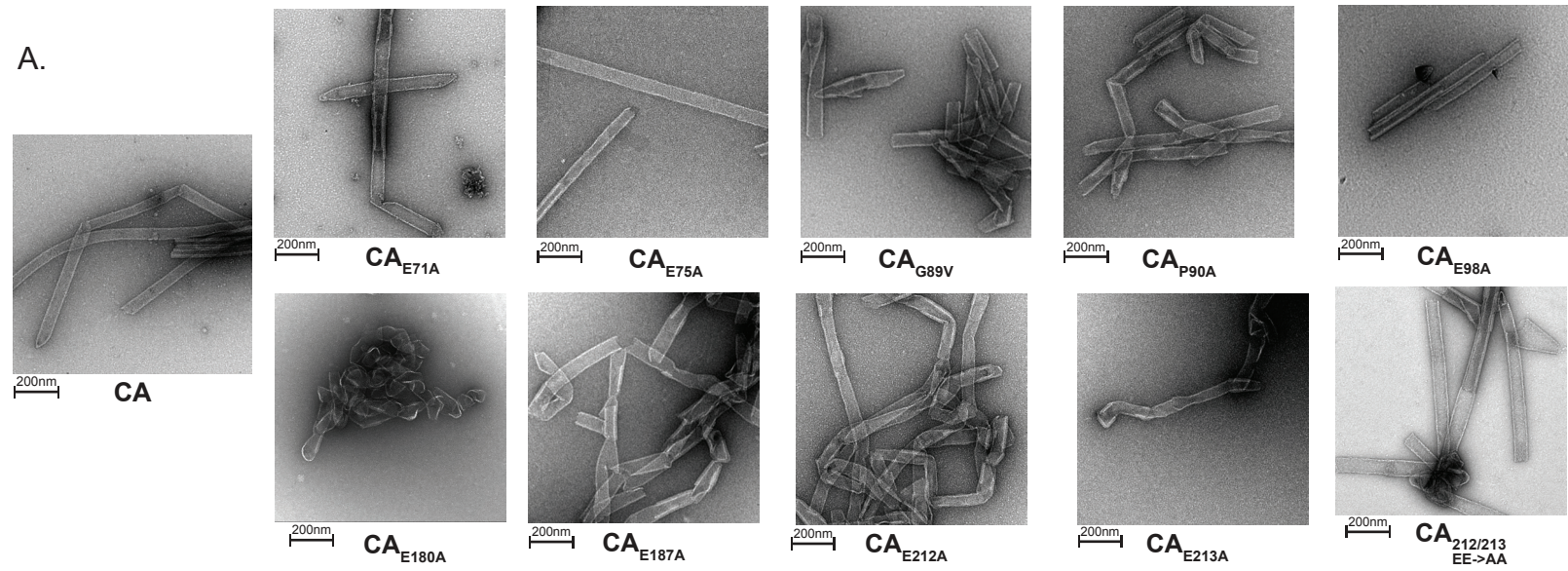


Figure S3. Mapping the MxB binding site, positive and negative controls. Related to Figure 2.

A. Full gels in triplicate of MBP and CCCyP copelleting assays performed in Figure 2

B. Quantification of MBP and CCCyP controls

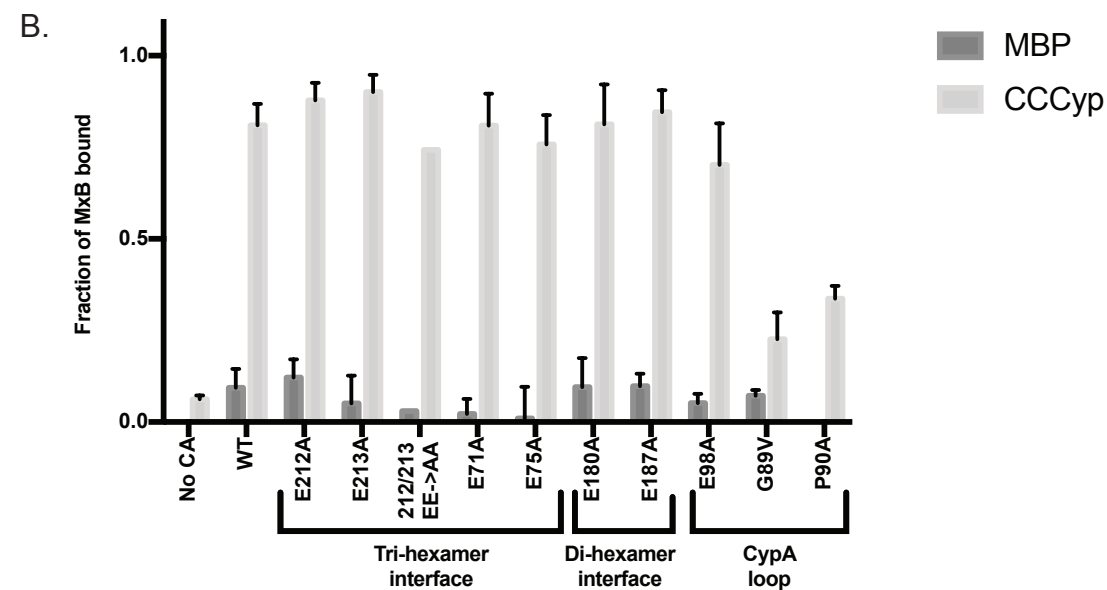
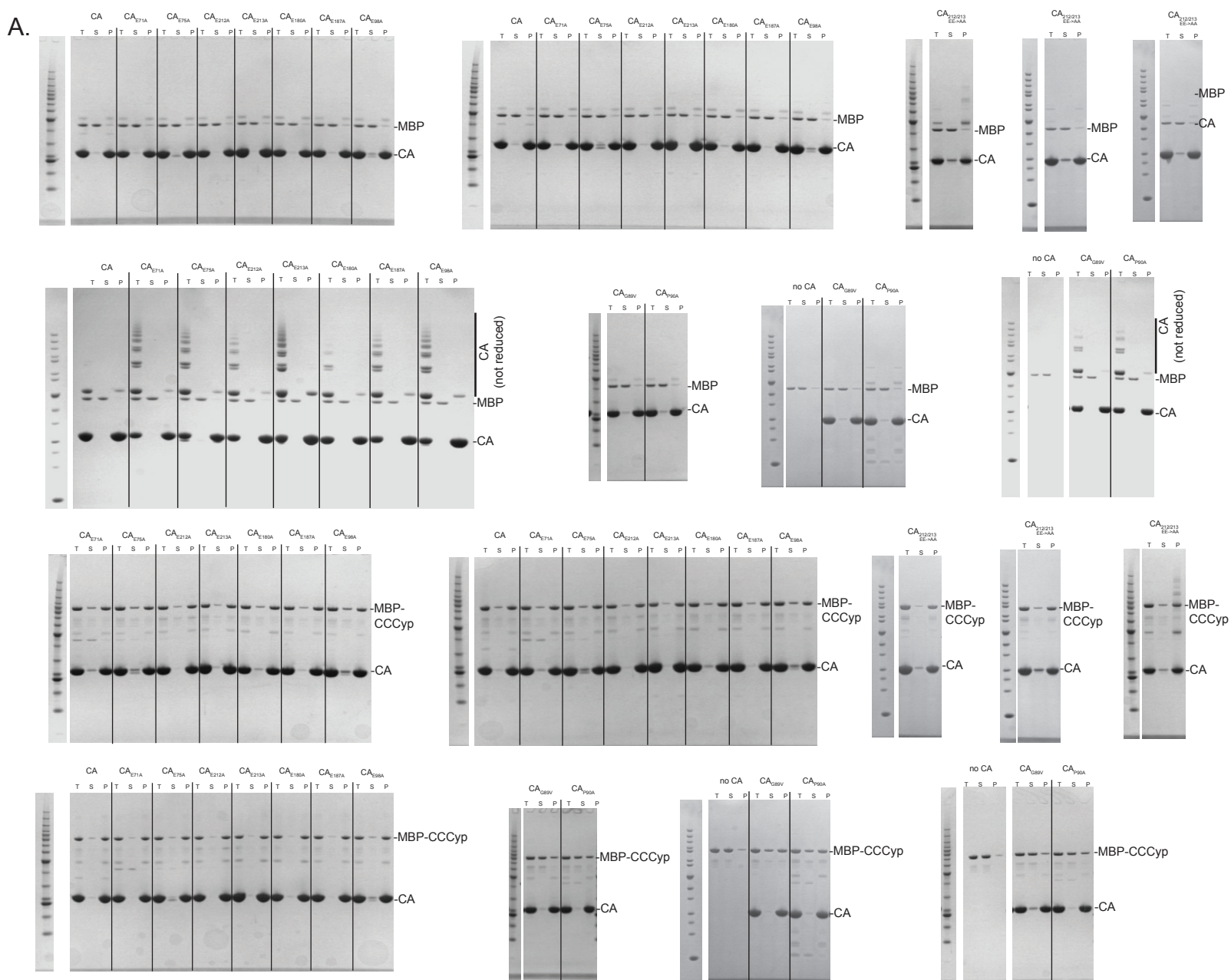


Figure S4. Testing CA mutations that escape MxB restriction. Related to Figure 3.

A. Electron micrographs of CA tubes used in Figure 3 (WT CA shown in Figure S2); B. Full gels in triplicate of copelleting assays performed in Figure 3; C. quantification of MBP and CCCyP controls

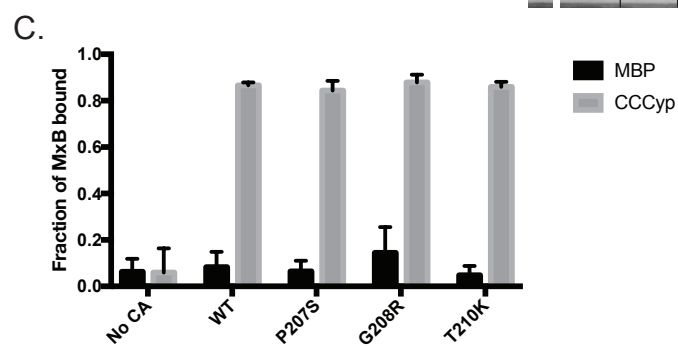
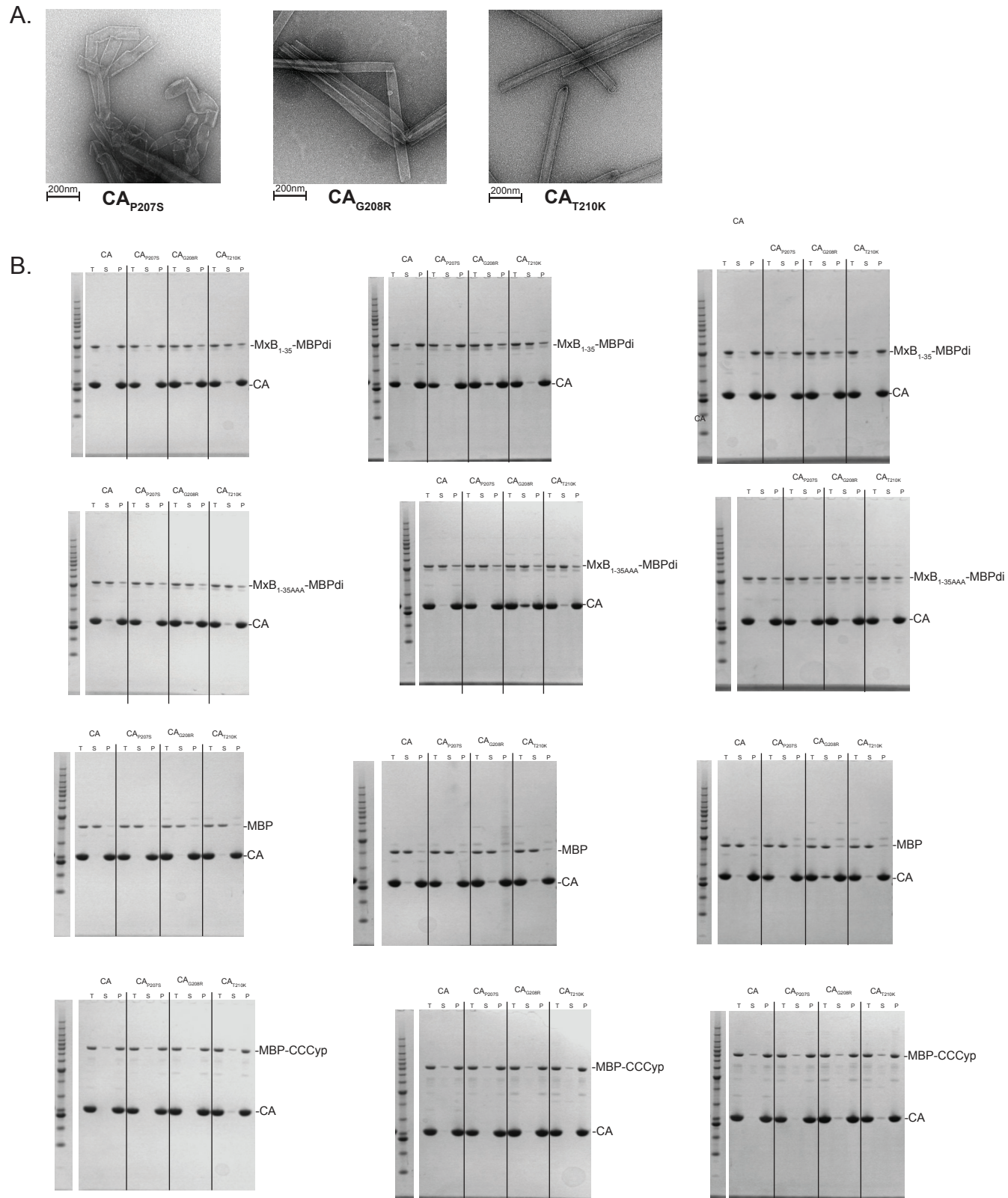


Figure S5. Molecular dynamics of the MxB-CA interaction. Related to Figure 4.

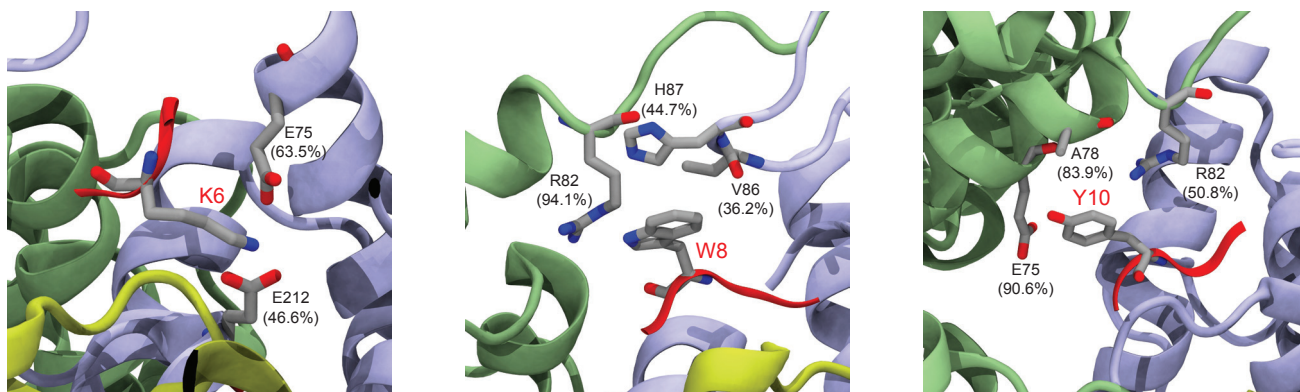
A. Molecular contact figures between MxB residues, K6 (left), W8 (middle), and Y10 (right), and CA residues.

B. The ion occupancies of sodium calculated from the MD trajectory;

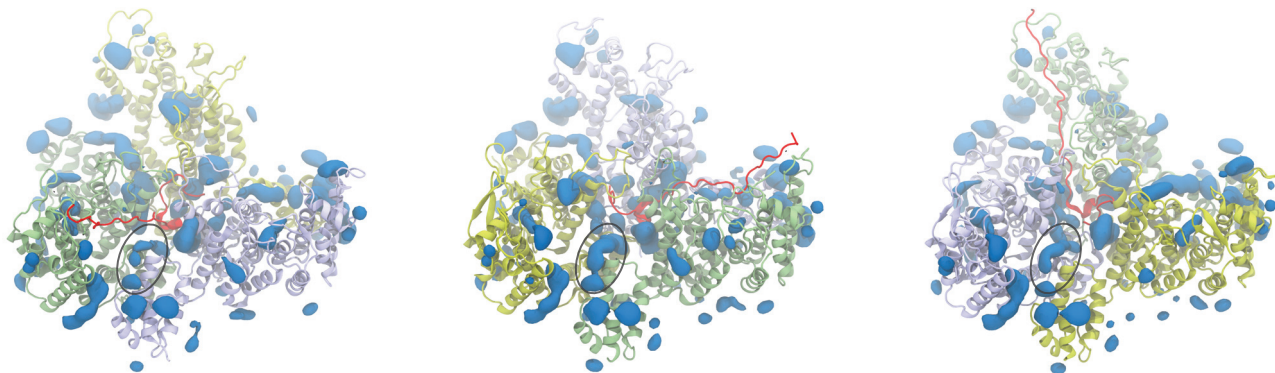
C. Ion occupancies of chloride calculated from the MD trajectory.

D. Contact analysis during the 15 μ s simulation of MxB and the di-hexamer and tri-hexamer interface.

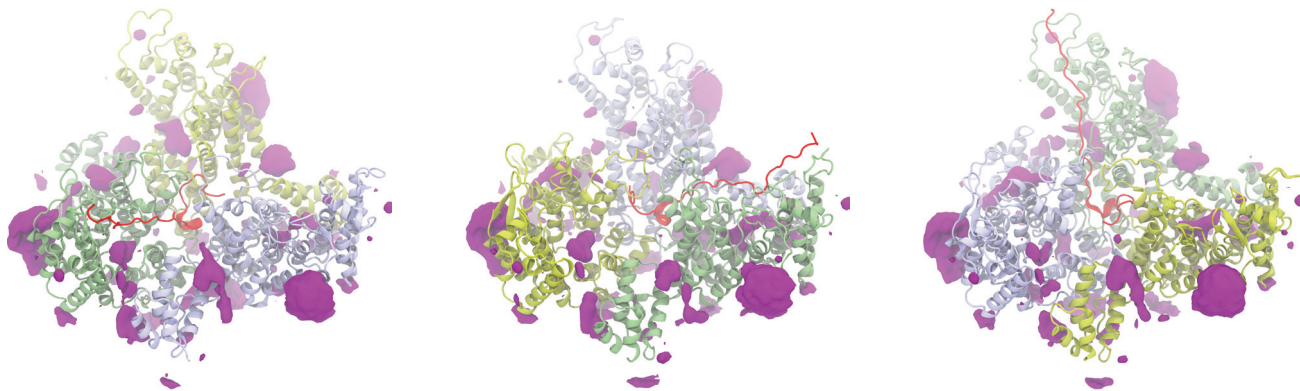
A.



B.



C.



D.

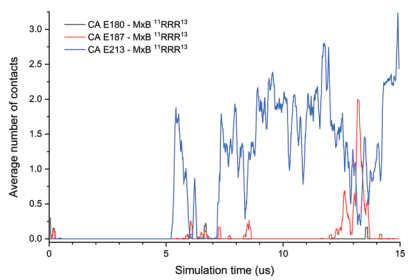


Table S1: Primers used to generate CA mutations, related to STAR Methods

REAGENT or RESOURCE	SOURCE	IDENTIFIER
Primer: CA E71A. FWD AGCTTCCTCATTGATGGTCGCTTTTAAACATTTGCATGGC	IDT/This paper	N/A
Primer: CA E71A REV GCCATGCAAATGTTAAAAGCGACCATCAATGAGGAAGCT	IDT/This paper	N/A
Primer: CA E75A FWD AAAAGAGACCATCAATGCGGAAGCTGCAGAATGGG	IDT/This paper	N/A
Primer: CA E75A REV CCCATTCTGCAGCTTCCGCATTGATGGTCTCT	IDT/This paper	N/A
Primer: CA G89V FWD CATCCAGTGCATGCAGTGCCTATTGCACCAGG	IDT/Laboratory collection	N/A
Primer: CA G89V REV CCTGGTGC AATAGGCACTGCATGCACTGGATG	IDT/Laboratory collection	N/A
Primer: CA P90A FWD CATCCAGTGCATGCAGGGGCAATTGCACCAGGCCAGATG	IDT/Laboratory collection	N/A
Primer: CA P90A REV CATCTGGCCTGGTGC AATTGCCCTGCATGCACTGGATG	IDT/Laboratory collection	N/A
Primer: CA E98A FWD CAGATGAGAGCACCAAGGGGAAGTGACA	IDT/This paper	N/A
Primer: CA E98A REV TCACTTCCCCTTGGTGCTCTCATCTGGC	IDT/This paper	N/A
Primer: CA E180A FWD GAGCCGAGCAAGCTTCACAAGCGGTAAAAAATTGGATGACAGA	IDT/This paper	N/A
Primer: CA E180A REV TCTGTCATCCAATTTTTTACCGCTTGTGAAGCTTGCTCGGCTC	IDT/This paper	N/A
Primer: CA E187A FWD GAGGTAAAAAATTGGATGACAGCAACCTTGTTGGTCCAAAATGCG	IDT/This paper	N/A
Primer: CA E187A REV CGCATTGTTGACCAACAAGGTTGCTGTCATCCAATTTTTTACCTC	IDT/This paper	N/A
Primer: CA E212A FWD ACCAGGAGCGACACTAGCAGAAATGATGACAGCAT	IDT/This paper	N/A
Primer: CA E212A REV ATGCTGTCATCATTCTGCTAGTGTGCTCGCTCCTGGT	IDT/This paper	N/A
Primer: CA E213A FWD AGGAGCGACACTAGAAGCAATGATGACAGCATGTC	IDT/This paper	N/A
Primer: CA E213A REV GACATGCTGTCATCATTGCTTCTAGTGTGCTCGCTCCT	IDT/This paper	N/A
Primer: CA EE212/213AA FWD GACCAGGAGCGACACTAGCAGCAATGATGACAGCATGTCA	IDT/This paper	N/A
Primer: CA EE212/213AA REV TGACATGCTGTCATCATTGCTGCTAGTGTGCTCGCTCCTGGTC	IDT/This paper	N/A
Primer: CA P207S FWD CTATTTTAAAAGCATTGGGAAGCGGAGCGACACTAGAAGAAATG	IDT/This paper	N/A
Primer: CA P207S REV CATTCTTCTAGTGTGCTCGCTCCGCTTCCCAATGCTTTTAAAATAG	IDT/This paper	N/A
Primer: CA G208R FWD GCATTGGGACCACGTGCGACACTAGAAG	IDT/This paper	N/A
Primer: CA G208R REV CTTCTAGTGTGCTCGACGTGGTCCCAATGC	IDT/This paper	N/A
Primer: CA T210K FWD GCATTGGGACCAGGAGCGAAACTAGAAGAAATGATGAC	IDT/This paper	N/A
Primer: CA T210K REV GTCATCATTCTTCTAGTTTCGCTCCTGGTCCCAATGC	IDT/This paper	N/A