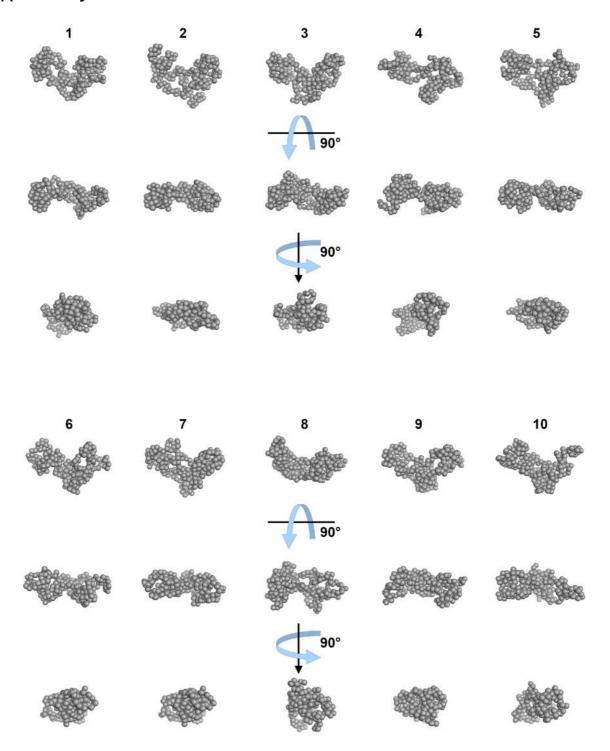
## **Supplementary Information**



**Figure S1:** Reconstructed three-dimensional *ab initio* models of Ca<sup>2+</sup>/CaM/NHE1<sub>CaMBD</sub>. Ten single models restored by the program GASBOR are shown. The average shape for the molecular envelope of Ca<sup>2+</sup>/CaM/NHE1<sub>CaMBD</sub> has been calculated from these ten independent GASBOR models using program DAMAVER.

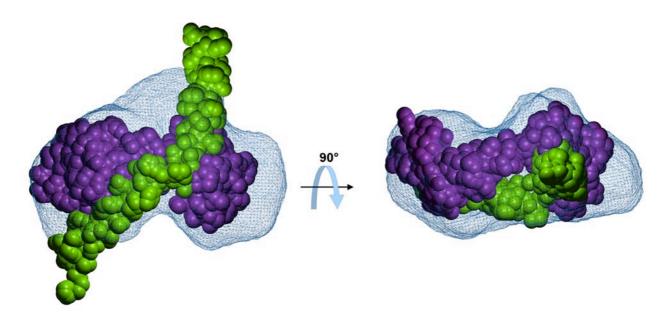


Figure S2: SAXS analysis of the NHE1<sub>CaMBR</sub>/Ca<sup>2+</sup>/CaM complex structure in solution. A low-resolution envelope (blue mesh) with the space filled model of NHE1<sub>CaMBR</sub>/Ca<sup>2+</sup>/CaM. NHE1<sub>CaMBR</sub> is shown in green and CaM in purple.