Supporting Information

Immobilization of the Influenza A M2 Transmembrane Peptide in Virus-Envelope Mimetic Lipid Membranes: A Solid-State NMR Investigation

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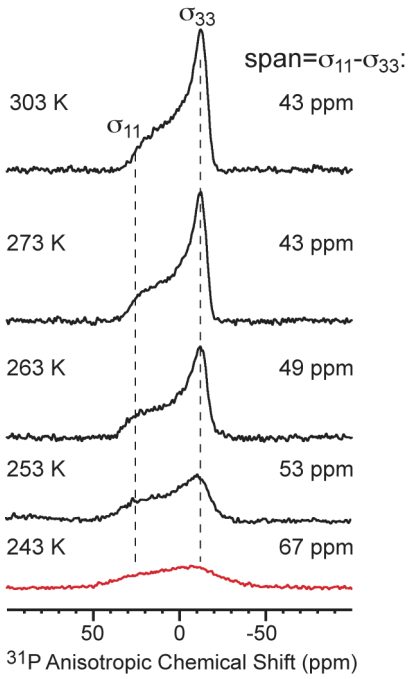

Fig. S1. Static ^{31}P direct-polarization spectra of AM2-TM containing viral membranes as a function of temperature. The width of the chemical shift anisotropy is indicated on the right. The membrane broadens significantly at 243 K, which correlates with the ^{15}N line broadening of the protein, indicating that the membrane phase property strongly affects the protein conformational averaging and conformational distribution.

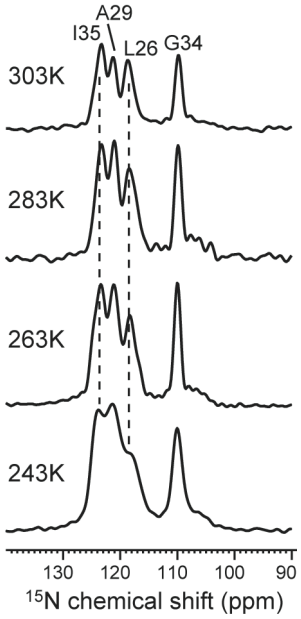

Fig. S2. ^{15}N CP-MAS spectra of LAGI-M2TMP in the viral membrane from 303 K to 243 K. The spectra show the same monotonic intensity increase with decreasing temperature as the ^{13}C spectra in **Fig. 5**. In addition, the ^{15}N spectra exhibit pronounced line broadening around 243 K, consistent with the large ^{31}P chemical shift anisotropy increase around 243 K. This suggests that the protein line broadening is due to the phase behavior and disorder of the viral membrane at low temperature.

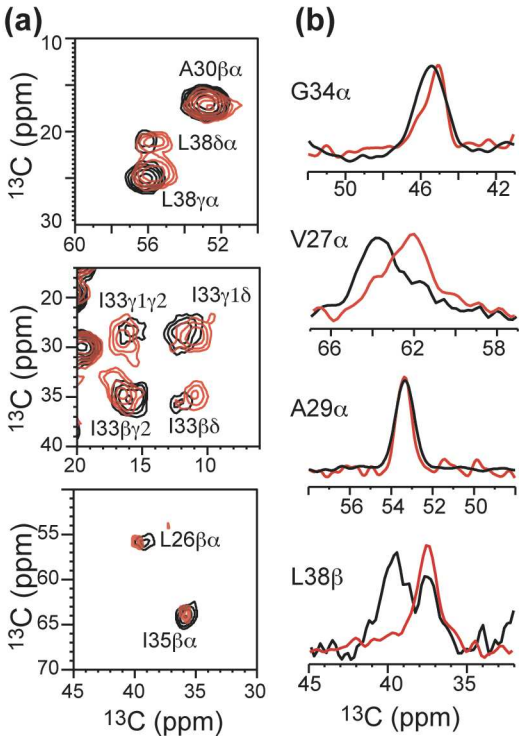

Fig. S3. ^{13}C chemical shifts of AM2-TM in viral membranes (red) versus DLPC bilayers (black). (a) Selected regions of the 2D spectra. The data were obtained at 303 K for the viral membrane samples and 243 K for the DLPC samples. (b) Selected 1D cross sections.