

## Secondary structures of the transmembrane domain of SARS-CoV-2 spike protein in detergent micelles

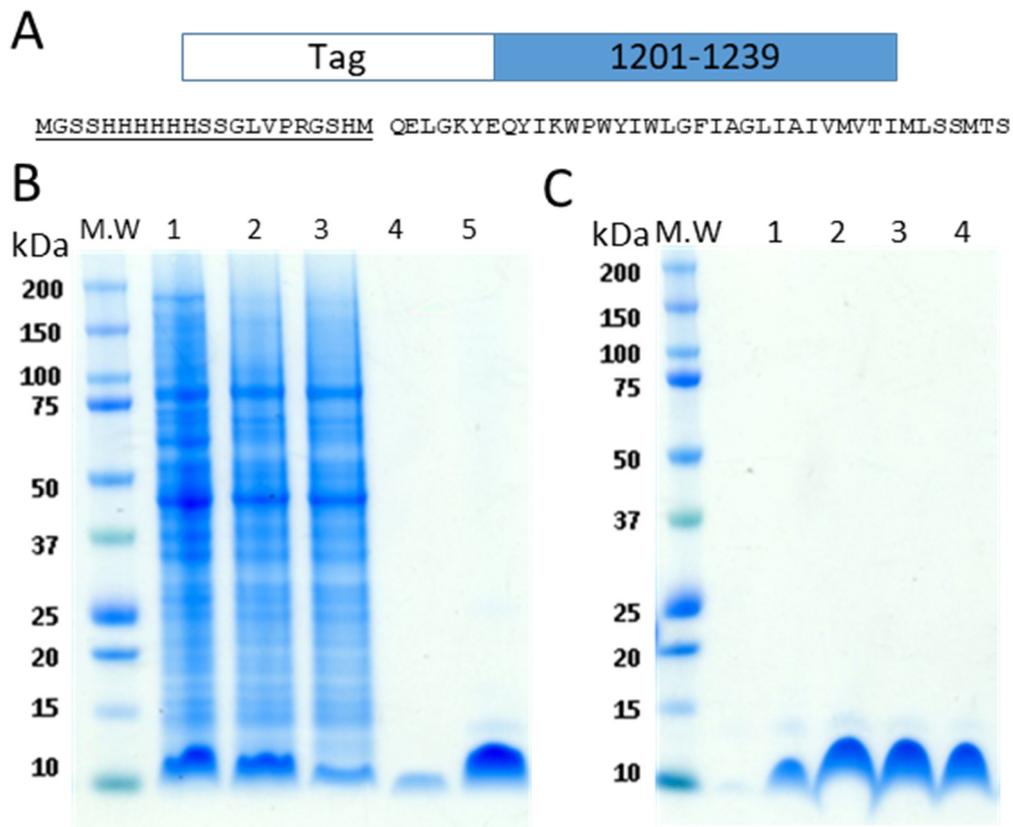


Figure S1 Purification of S-TM for structural studies. A. The constructs used in the study. A construct containing a tag at the N-terminus was used in the study. B. Purification of S-TM using Ni<sup>2+</sup>-NTA resin. Lane 1-3 are total cell lysate, cell pellet after adding a urea buffer and flow through fraction from the resin, respectively. Lanes 4 and 5 are the eluted fraction from the resin, respectively. C. Purification of S-TM using gel filtration chromatography. Lanes 1 and 4 are the fractions containing S-TM protein.

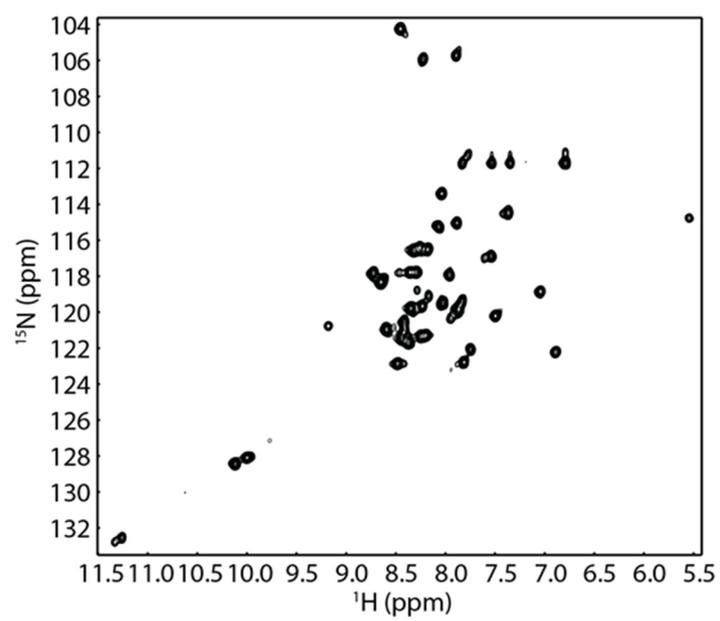


Figure S2  $^1\text{H}$ - $^{15}\text{N}$ -HSQC spectrum of S-TM in DPC micelles. The data was collected 313K as described in the Materials and Methods.

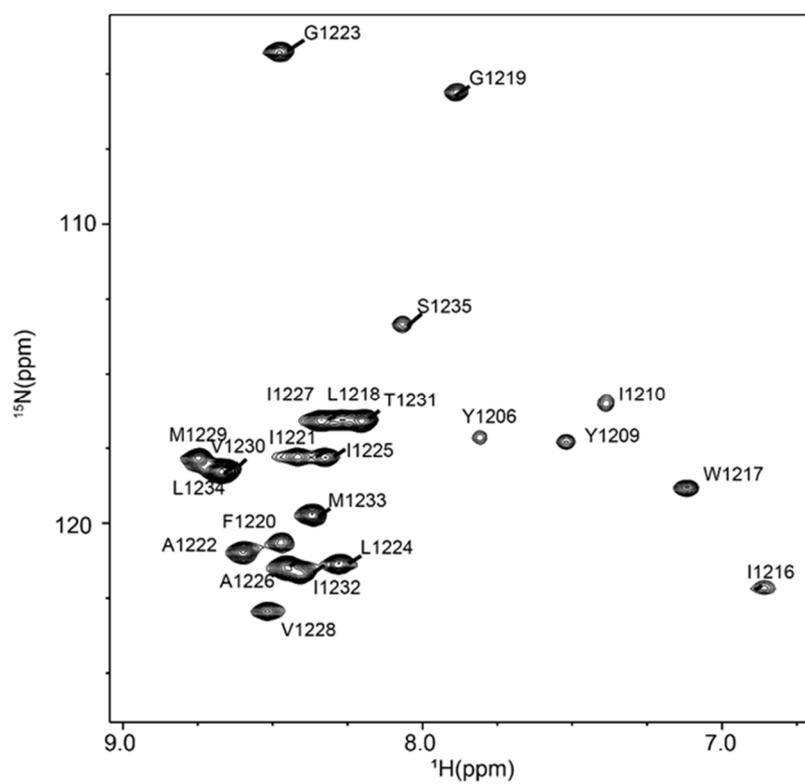


Figure S3  $^1\text{H}$ - $^{15}\text{N}$ -HSQC spectrum of S-TM reconstituted in DPC micelles and in  $\text{D}_2\text{O}$ . Purified S-TM was lyophilized and 99%  $\text{D}_2\text{O}$  was added into the sample. The  $^1\text{H}$ - $^{15}\text{N}$ -HSQC was collected after 10 min.

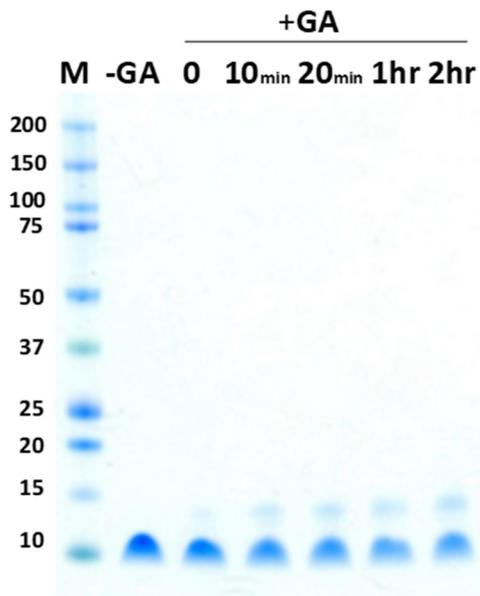


Figure S4 Cross-linking of S-TM in DPC micelles using glutaraldehyde (GA). The protein sample was mixed with GA as described in Materials and Methods and then subjected to analysis by SDS-PAGE.