Electronic Supplementary Material (ESI) for Faraday Discussions.

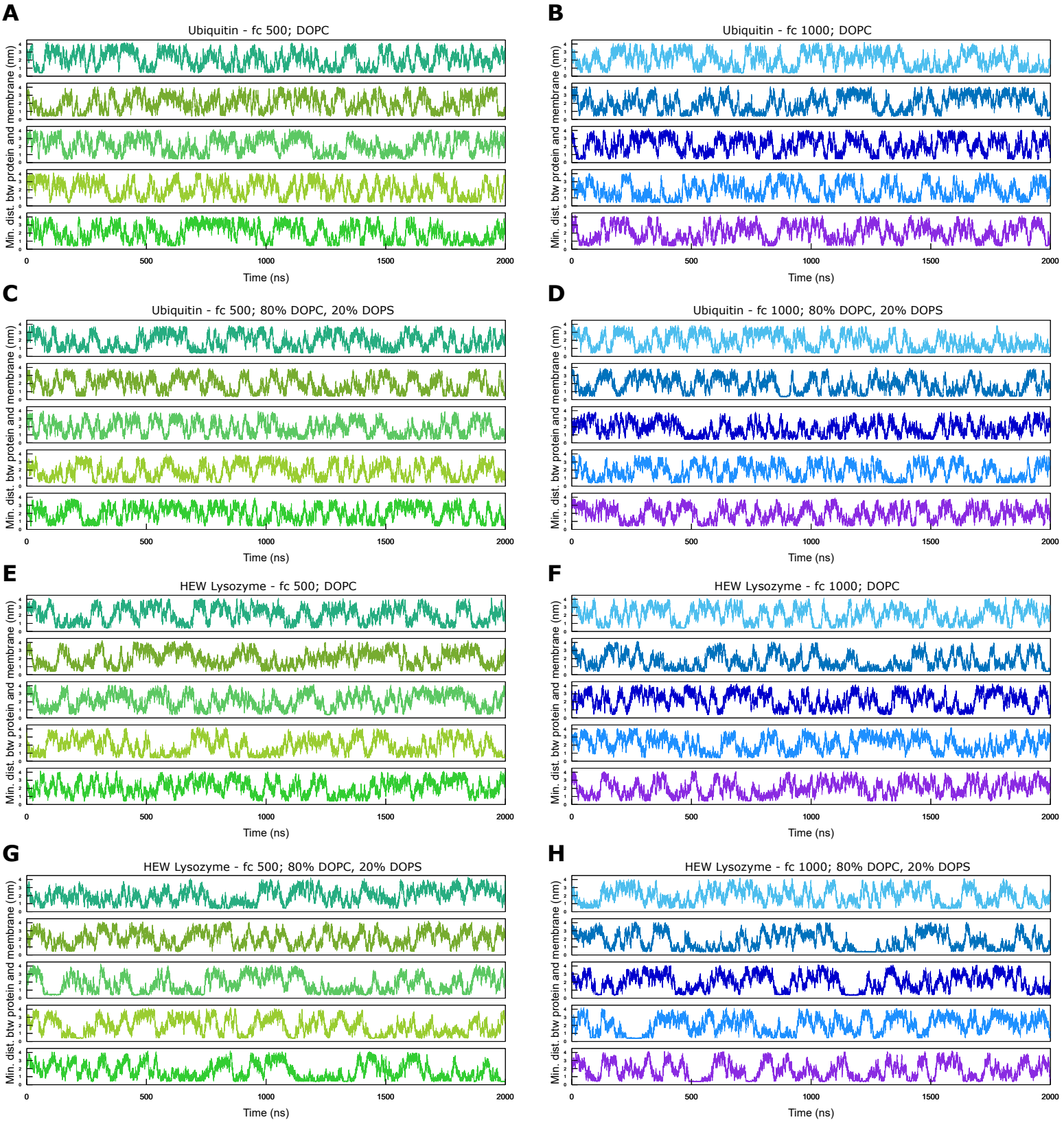

Figure S1: **Soluble proteins.**
(A-D) Time trace of minimum distance values for each replica, between ubiquitin and bilayers of different compositions at both values of fc.
(E-H) Time trace of minimum distance values for each replica, between HEW Lysozyme for and bilayers of different compositions at both values of fc.
Lipid compositions and fc values are mentioned in the title above each plot.

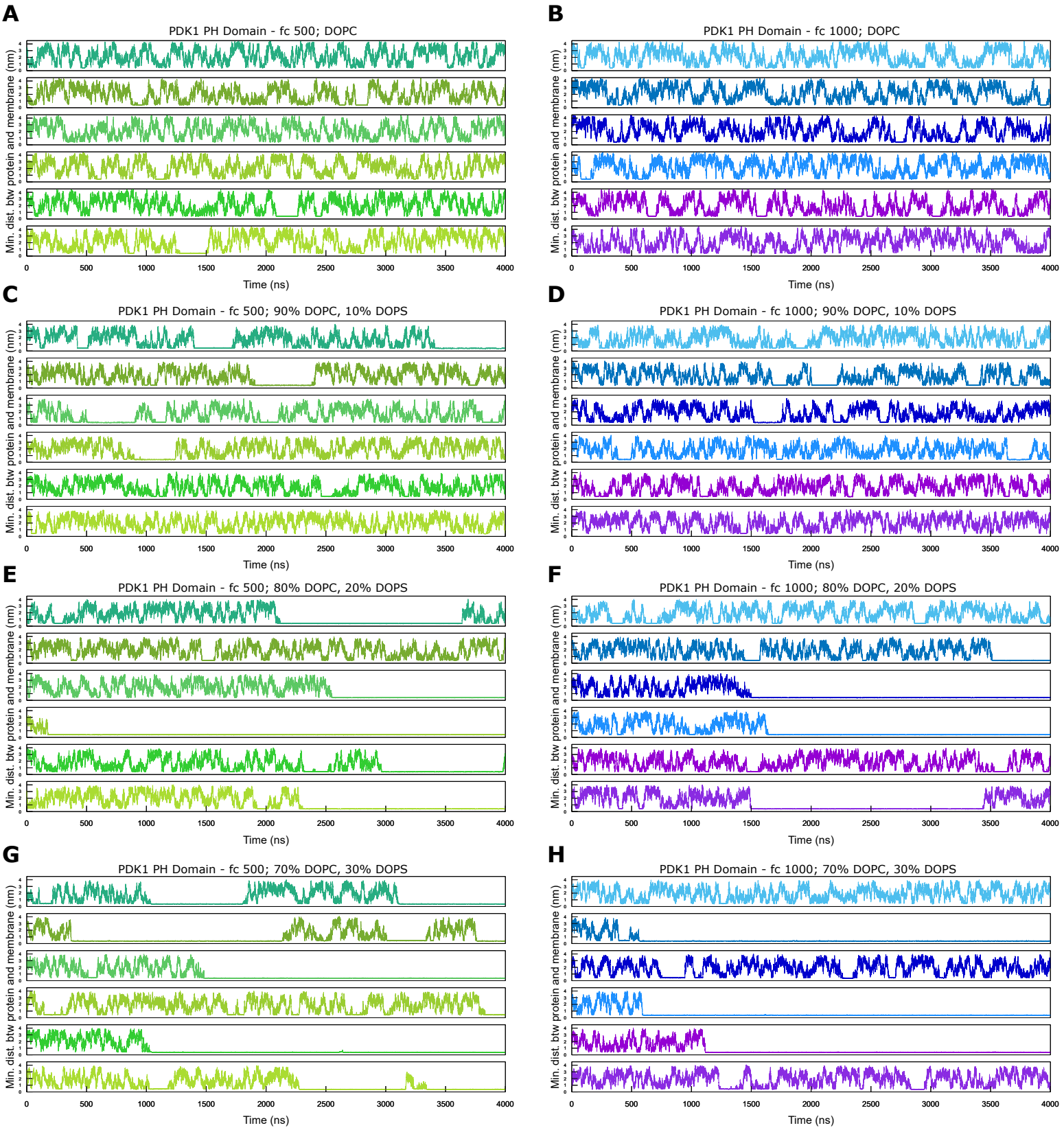

Figure S2: **PDK1 PH Domain**.
Time trace of minimum distance values between the PDK1 PH domain and bilayers of different compositions at both values of fc.

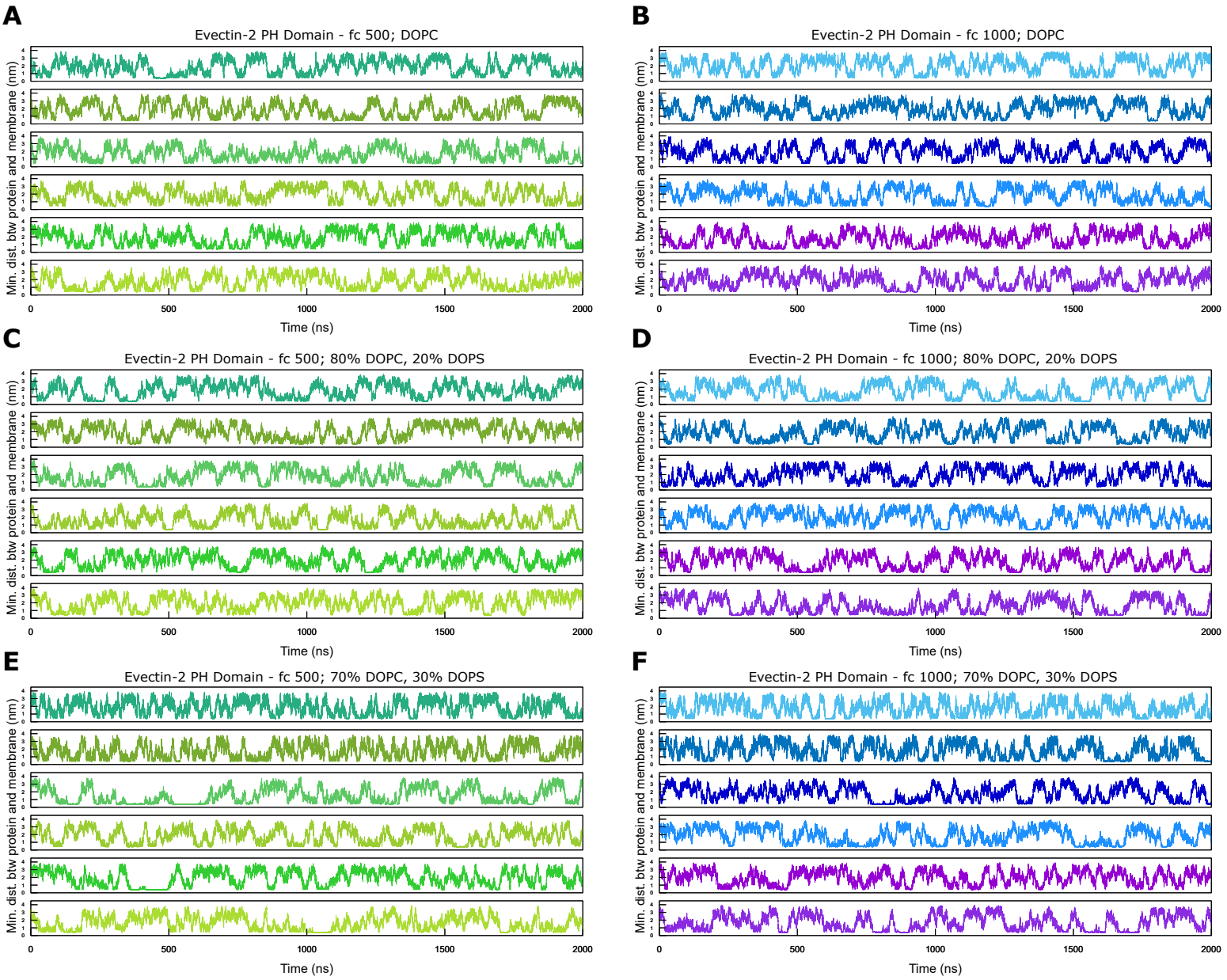

Figure S3: **Evectin-2 PH Domain.**
Time trace of minimum distance values between the Evectin-2 PH domain and bilayers of different compositions at both values of fc.

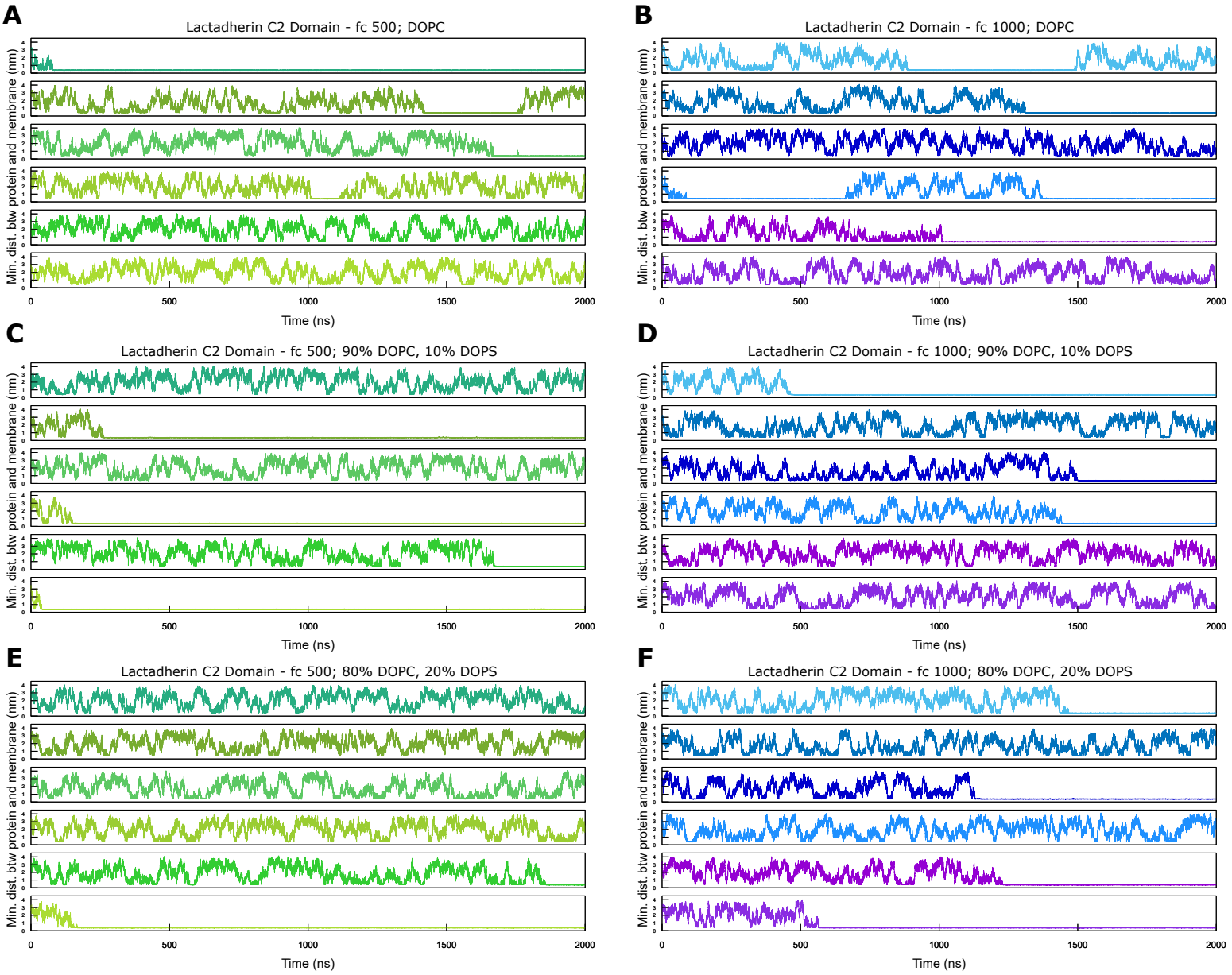

Figure S4: **Lactadherin C2 Domain.**
Time trace of minimum distance values between the Lactadherin C2 domain and bilayers of different compositions at both values of fc.

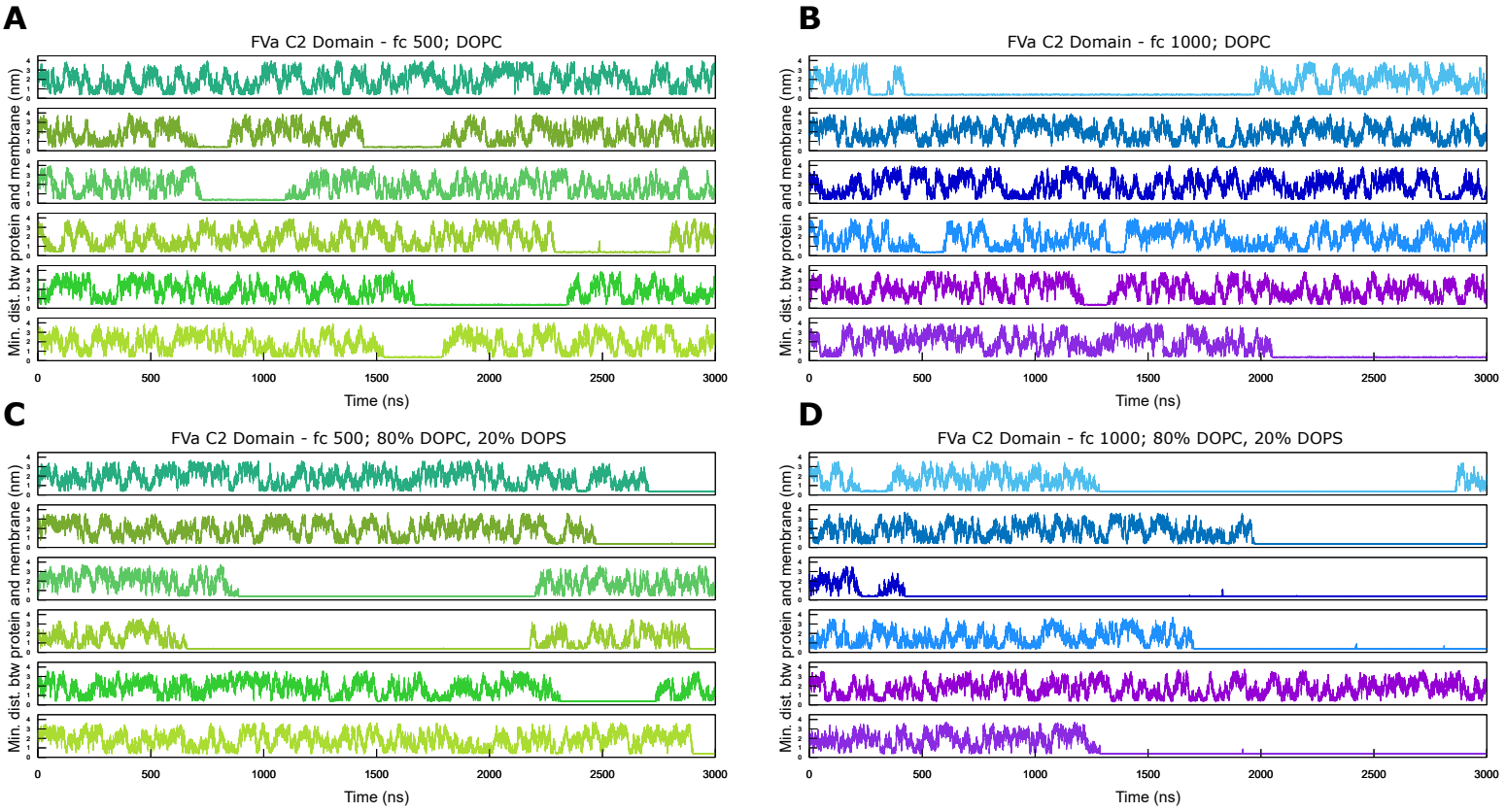

Figure S5: **FVa C2 Domain**.
Time trace of minimum distance values between the FVa C2 domain and bilayers of different compositions at both values of fc.

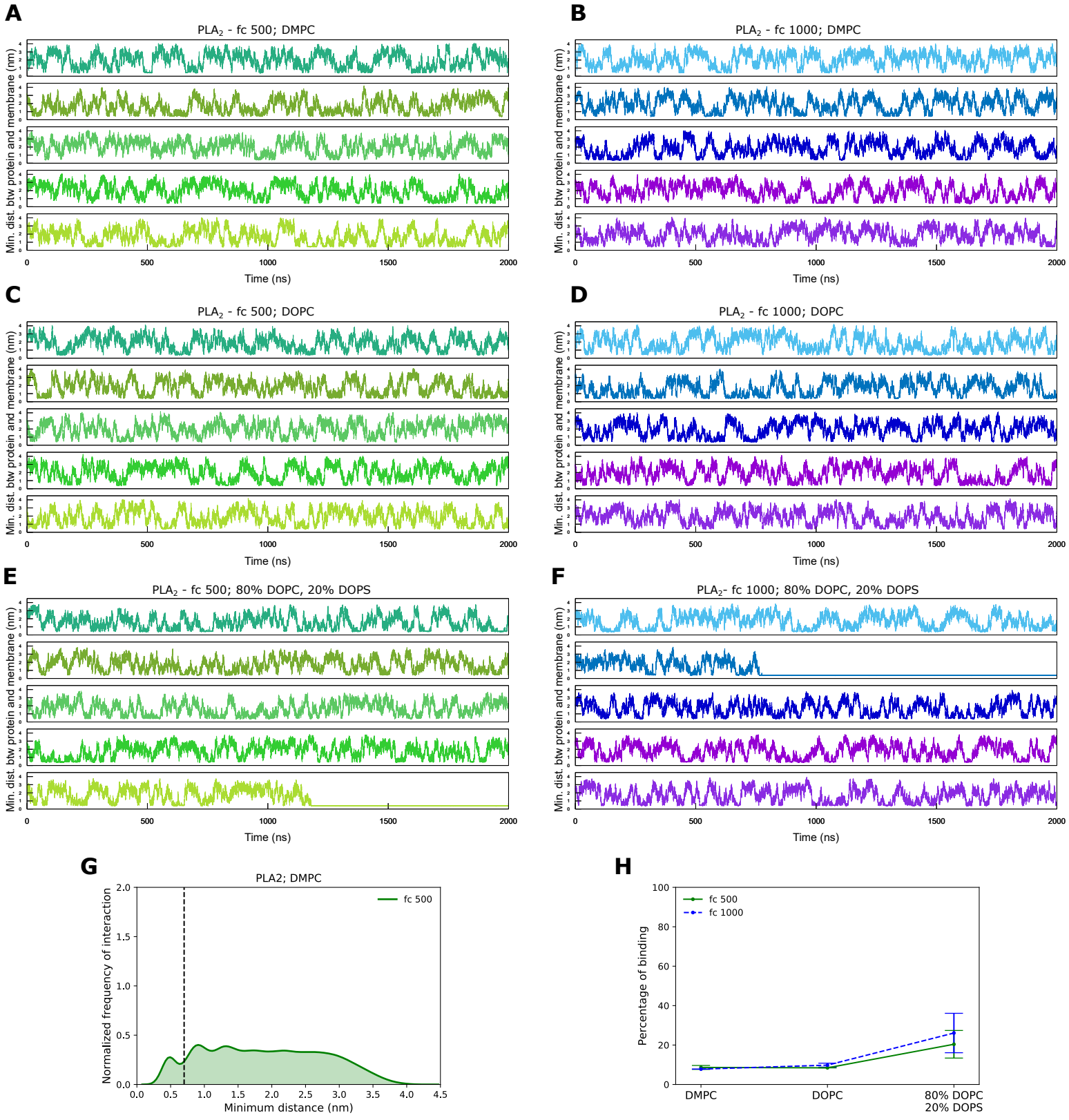

Figure S6: **PLA_2 .**

(A-F) Time trace of minimum distance values between PLA_2 and bilayers of different compositions at both values of fc. (G) Probability density distribution of protein-membrane minimum distances in DMPC lipid bilayer at fc = 500 kJ/mol/nm^{-2}. (H) Percentage of binding of PLA_2 at different membrane compositions.

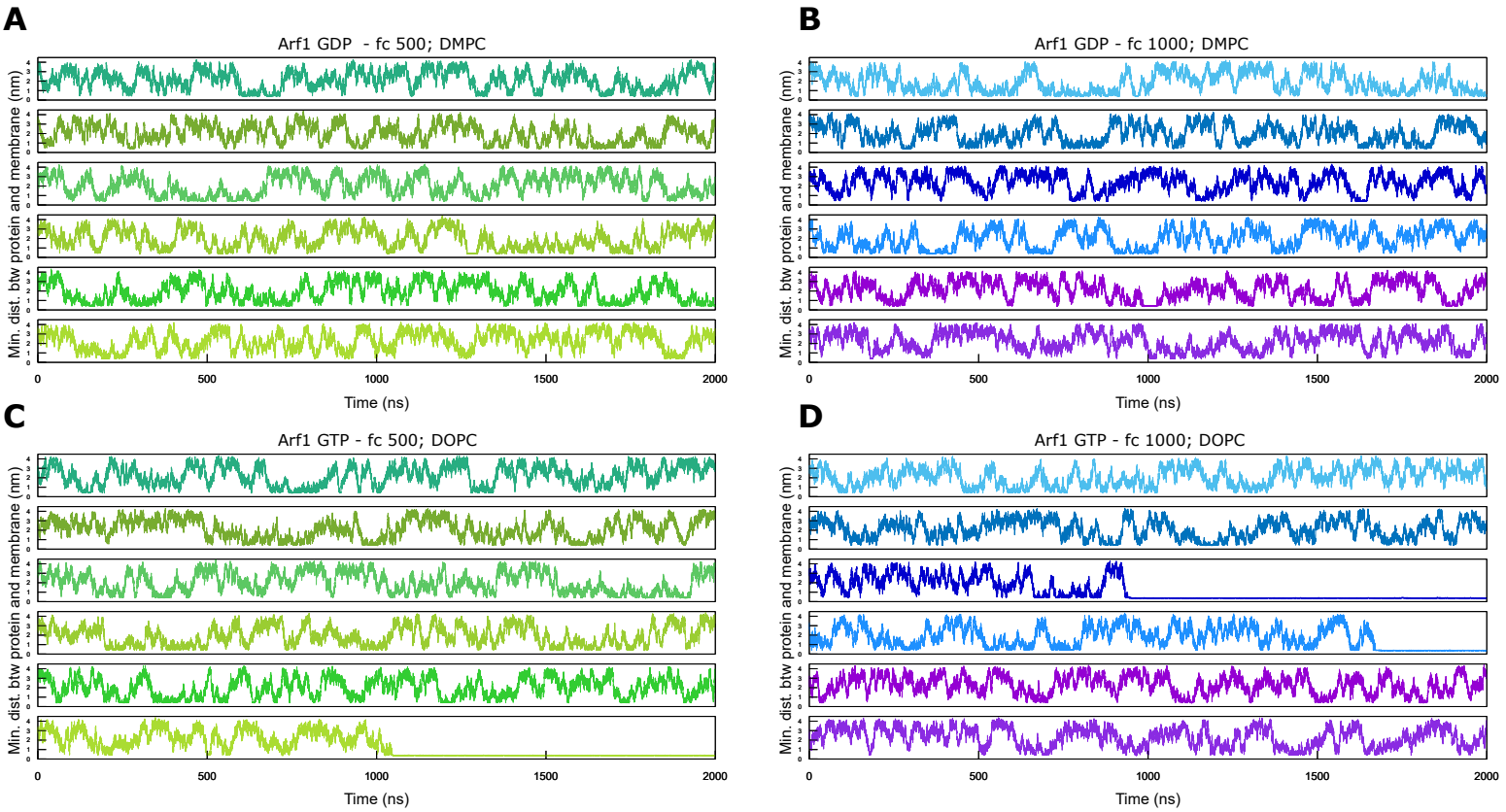

Figure S7: **Arf1 protein**.
Time trace of minimum distance values between the Arf1 protein in the GDP-bound (A,B) or GTP-bound conformer (C,D) and bilayers of different compositions at both values of fc.

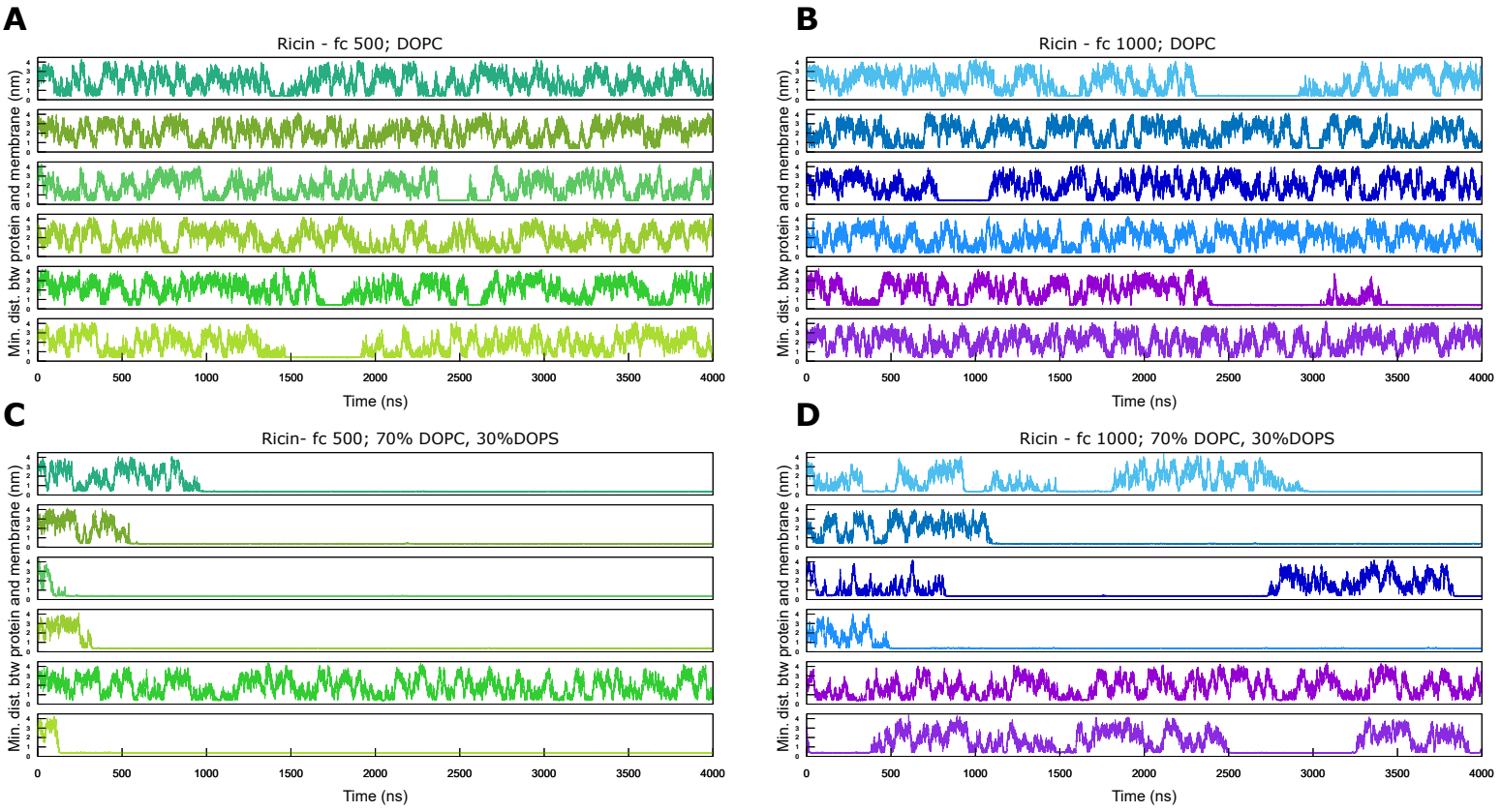

Figure S8: **Ricin.**
Time trace of minimum distance values between the ricin and bilayers of different compositions at both values of fc.

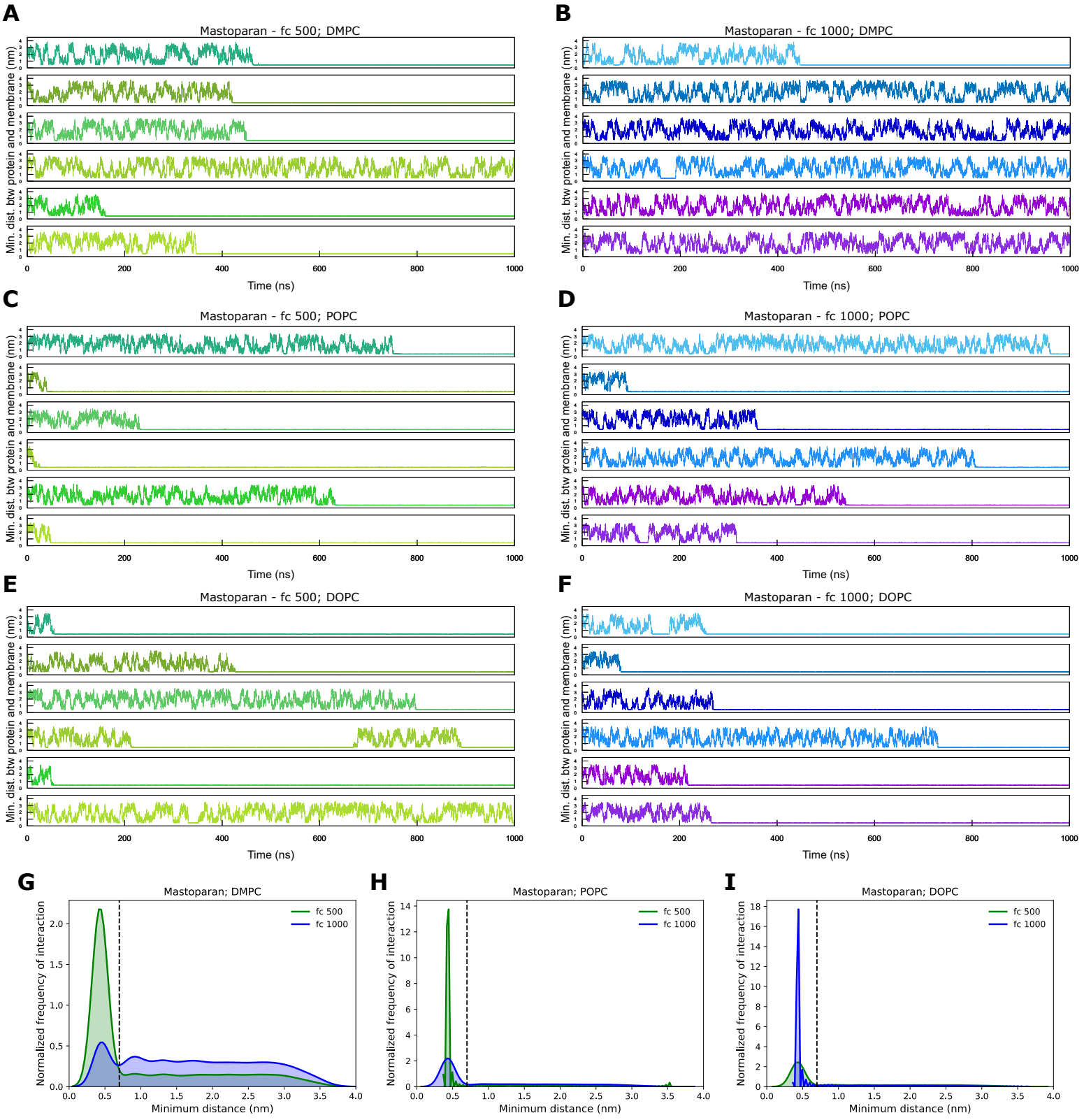

Figure S9: **Mastoparan.**
(A-F) Time trace of minimum distance values between Mastoparan and bilayers of different compositions at both values of fc.
(G-I) Probability density distribution of protein-membrane minimum distances for different lipid bilayers

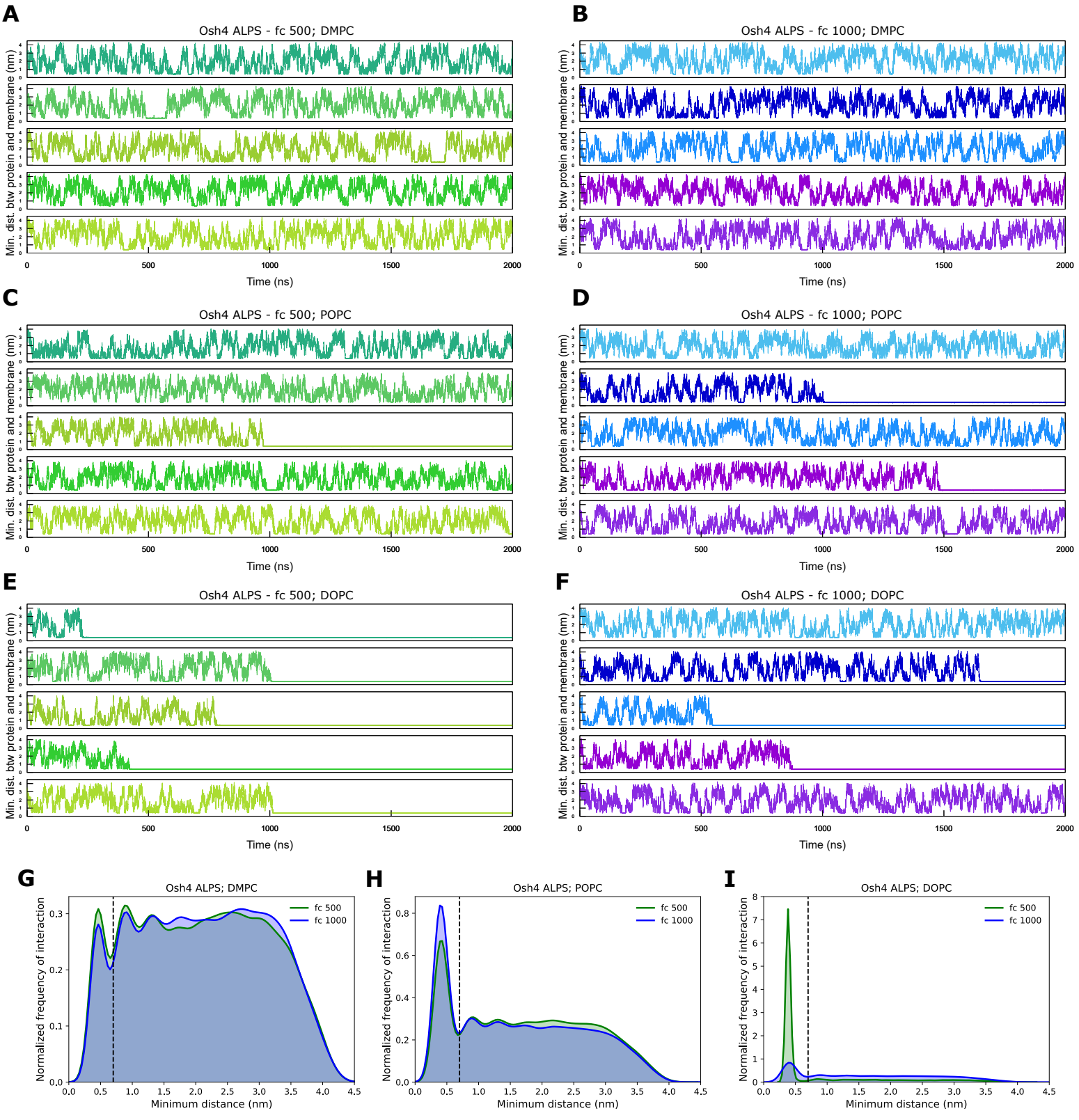

Figure S10: **Osh4 ALPS peptide.**
(A-F) Time trace of minimum distance values between the Osh4 ALPS peptide and bilayers of different compositions at both values of fc.
(G-I) Probability density distribution of peptide-membrane minimum distances for different lipid bilayers

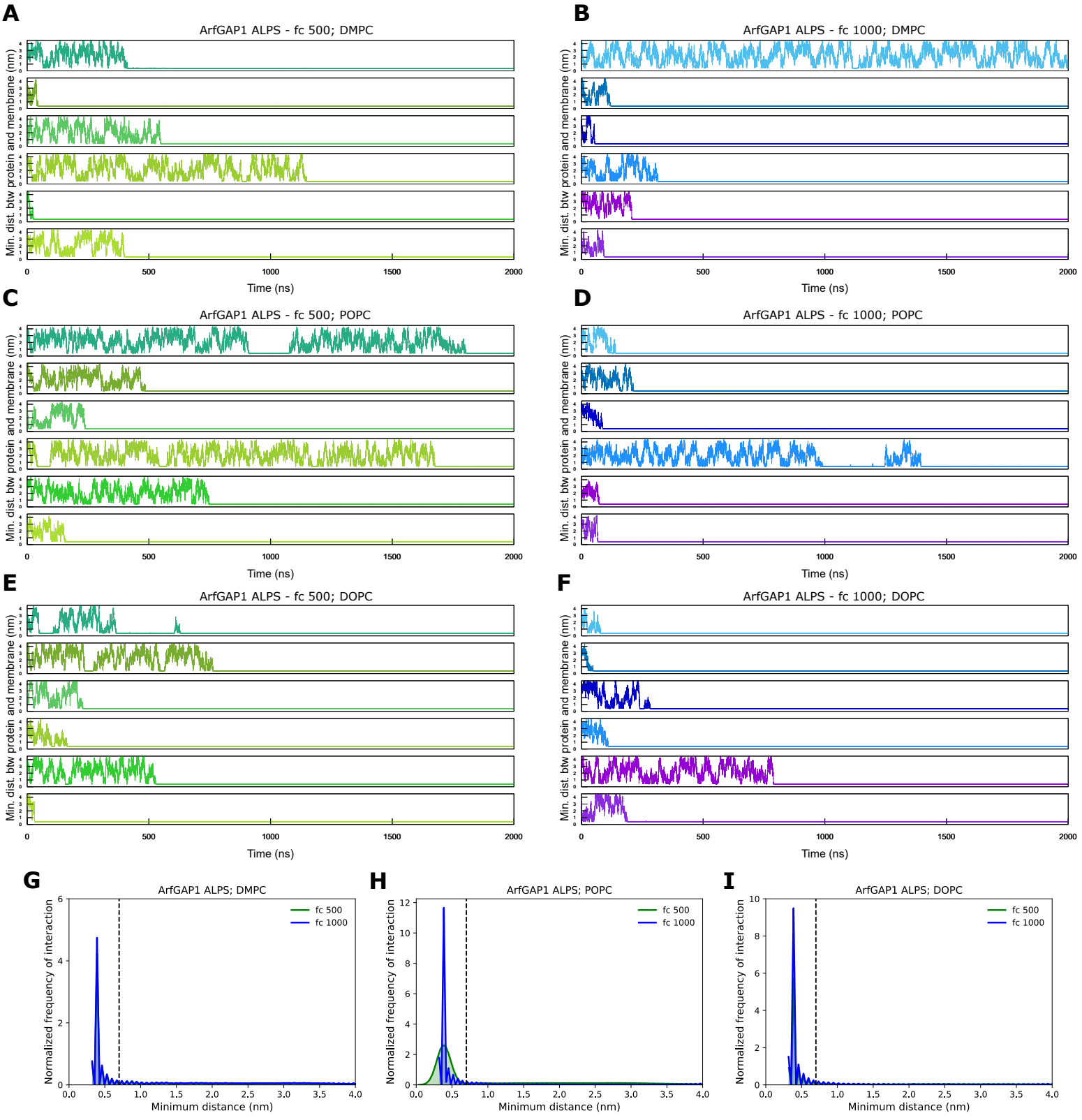

Figure S11: **ArfGAP1 ALPS peptide.**
(A-F) Time trace of minimum distance values between the ArfGAP1 ALPS peptide and bilayers of different compositions at both values of fc.
(G-I) Probability density distribution of protein-membrane minimum distances for different lipid bilayers