



**Supplementary Figure 1. Electrostatic interactions between key basic residues and membrane lipids.** Green, PIP<sub>2</sub>; black, POPS; red, cholesterol; blue, POPE; magenta, POPC; orange, sphingomyelin. Note how Arg78, Lys79, and Arg96 have stable PIP<sub>2</sub> contacts, while Arg88 has strong interactions with PS, and these interactions are observed for both wtP2 and P38G.