

Supplementary information, Figure S4

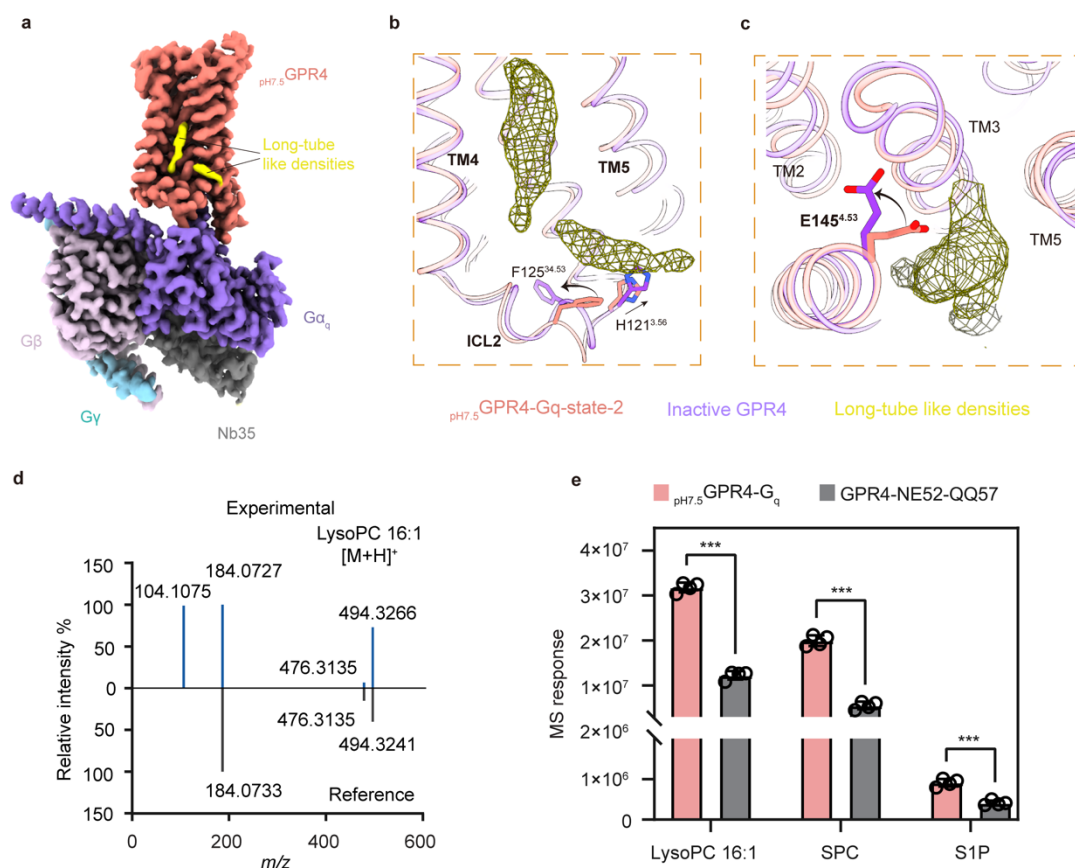


Fig. S4 The lipids density map in pH7.5GPR4-Gq structure. **a**, Two pieces of extra density were observed in GPR4-G_q density map. **b**, The conformational changes of H121^{3.56} and F125^{34.53} in ICL2 between $\text{pH7.5GPR4-Gq-state-2}$ and inactive GPR4 structures. **c**, The conformational change of E145^{4.53} between $\text{pH7.5GPR4-Gq-state-2}$ and inactive GPR4 structures. **d**, High-resolution MS/MS spectrum of LysoPC (16:1) identified from the pH7.5GPR4-Gq complex sample (upper, blue) aligned with the MS/MS spectrum of the reference compound recorded in LipidBlast database (lower, gray). **e**, MS responses of LysoPC (16:1), sphingosylphosphorylcholine (SPC) and sphingosine-1-phosphate (S1P) identified in GPR4-NE52-QQ57 and pH7.5GPR4-Gq complex samples. Data are presented as means $\pm$ SD (n=4 independent experiments). Student's two-tailed t-test was performed to determine statistical significance (ns, no significance; *** $P < 0.001$).