



Supplementary information, Fig. S2 Mass spectrometry analysis of lipids isolated from MlaFEDCB in DDM and in nanodiscs. **a**, Mass spectra of lipids purified from buffer alone. **b**, Mass spectra of lipids isolated from purified MlaFEDCB in DDM, the ions at m/z 733.5, 747.5, 761.5, 773.5, 787.5 were identified as PG. The ions at m/z 702.5, 716.5 and 742.5 were identified as PE. **c**, Mass spectra of lipids purified from MlaFEDCB in POPG nanodisc. **d**, Mass spectra of lipids purified from MlaFEDCB in POPG nanodisc at zoomed range from m/z 680 to 800. **e**, Tandem MS spectra of the fragments at m/z 733.5 from purified MlaFEDCB in DDM. The fragment at m/z 733.5 is consistent with PG with two acyl chain of C16:0 and C17:1. **f** Tandem MS spectra of the fragments at m/z 747.5 from purified MlaFEDCB in DDM. The fragment at m/z 747.5 is consistent with PG with two acyl chain of C16:0 and C18:1. **g**, Tandem MS spectra of the fragments at m/z 773.5 from purified MlaFEDCB in DDM. The fragment at m/z 773.5 is consistent with PG with two acyl chain of C18:1 and C18:1. **h**, Tandem MS spectra of the fragments at m/z 702.5 from purified MlaFEDCB in DDM. The fragment at m/z 702.5 is consistent with PE with two acyl chain of C16:0 and C17:1. **i**, Tandem MS spectra of the fragments of YAGALVLGQYYK from MlaC in MlaFEDCB in nanodisc. **j**, Tandem MS spectra of the fragments of NSQTGNWQAYDMIAEGVSMITTK from MlaC in MlaFEDCB in nanodisc. **k**, Tandem MS spectra of the fragments of LMMVALLVIAPLSAATAADQTNPYK from MlaC in MlaFEDCB in nanodisc. **l**, Tandem MS spectra of the fragments of TIVDQELLPYVQVK from MlaC in MlaFEDCB in nanodisc.