

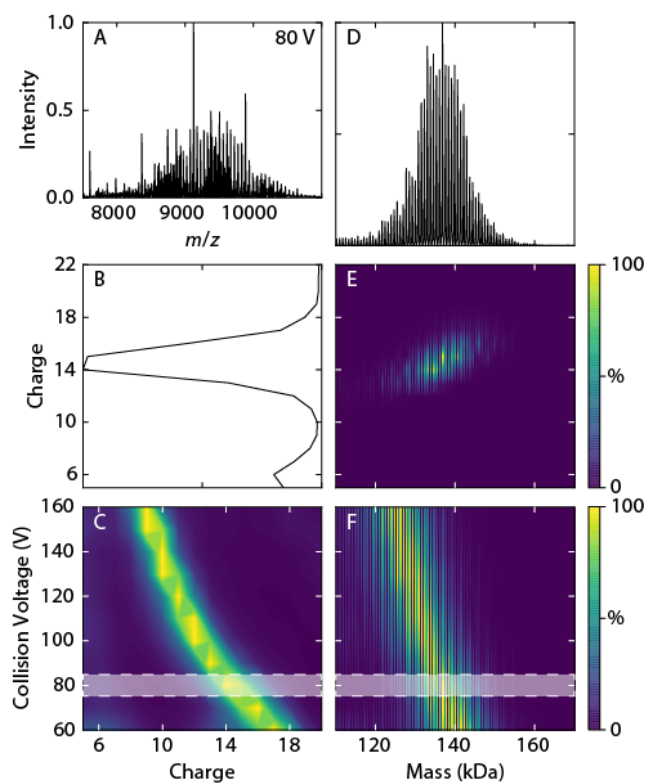
**Supporting Information for:**

## **Unraveling the Composition and Behavior of Heterogeneous Lipid Nanodiscs by Mass Spectrometry**

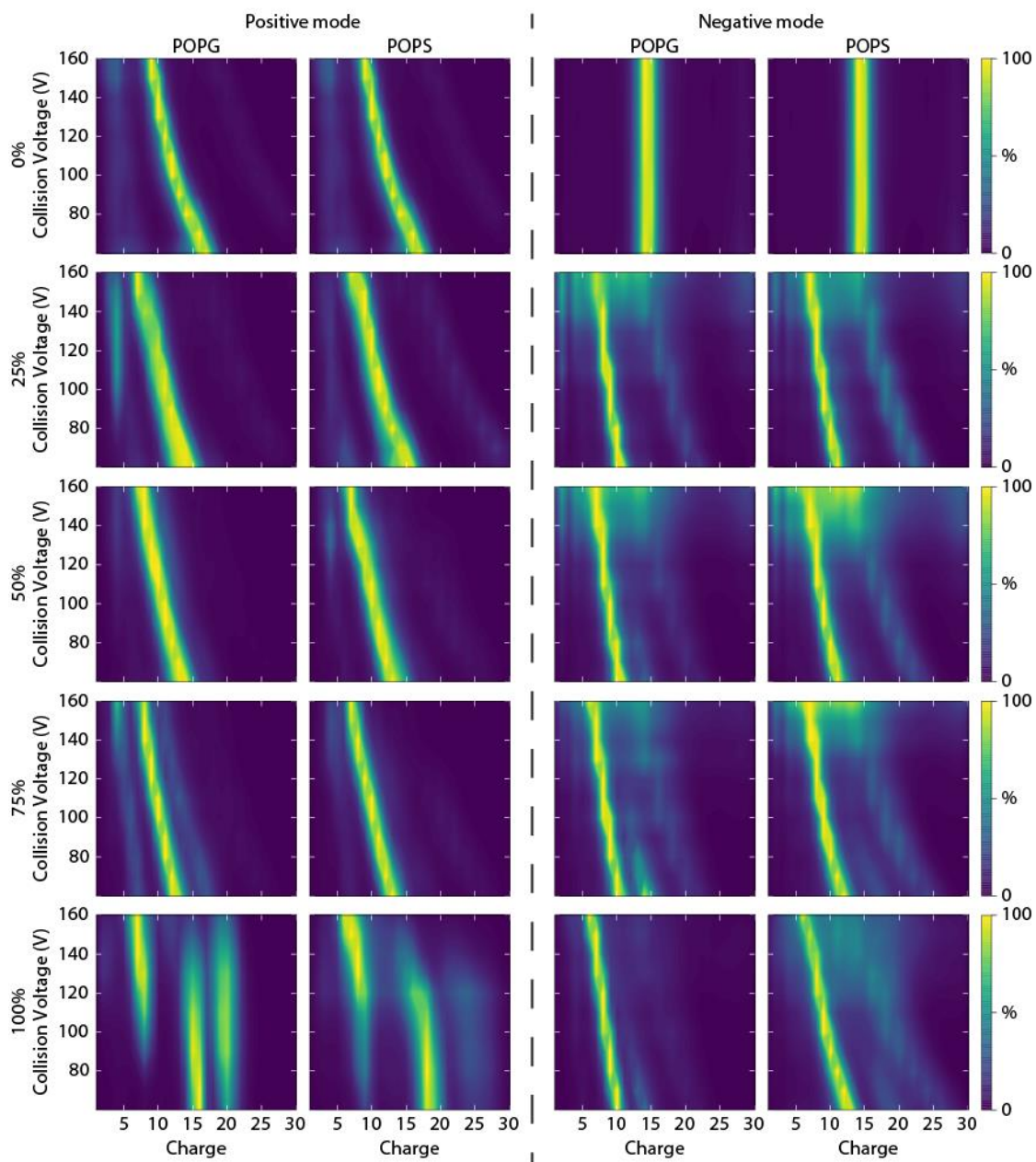
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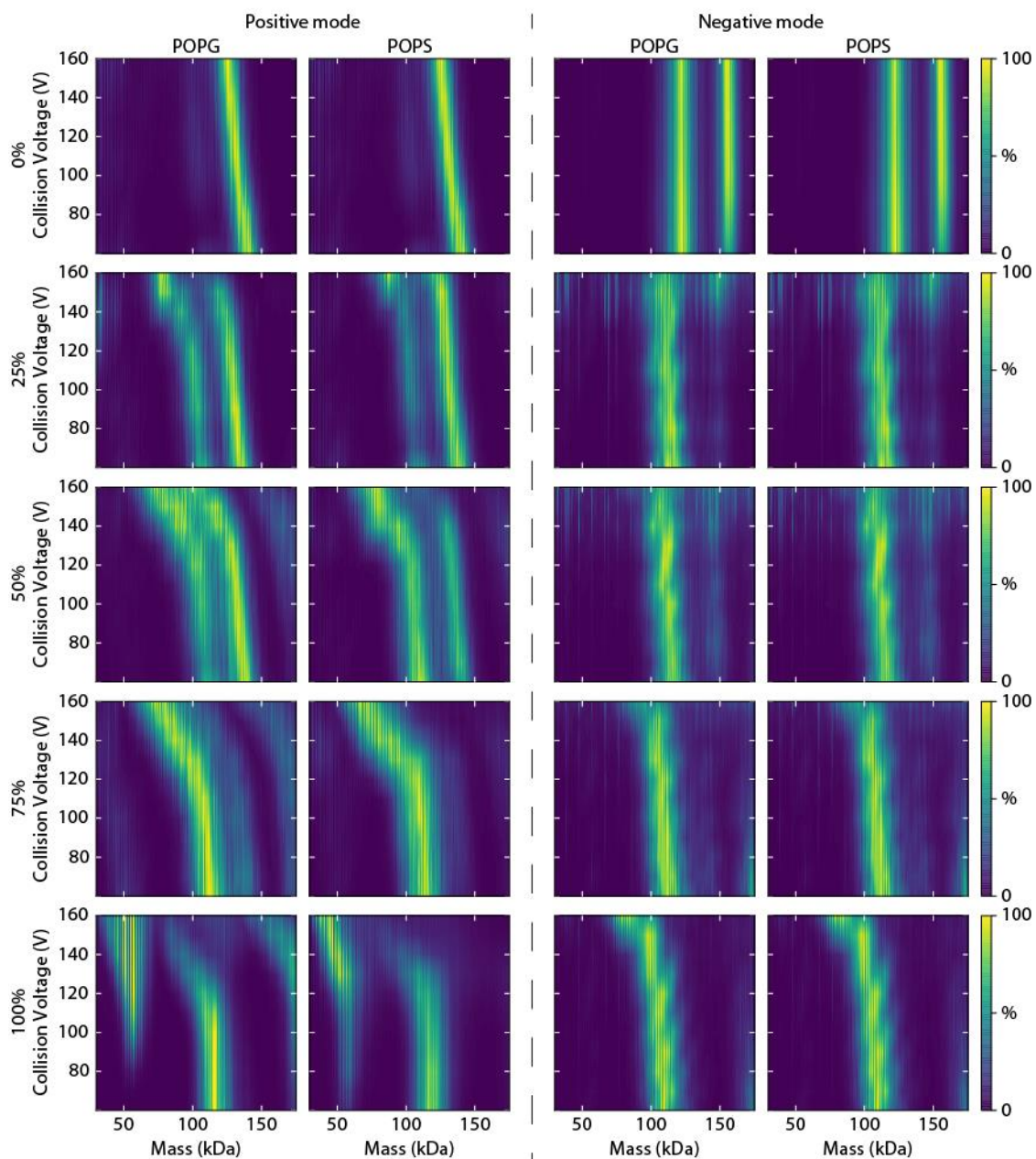
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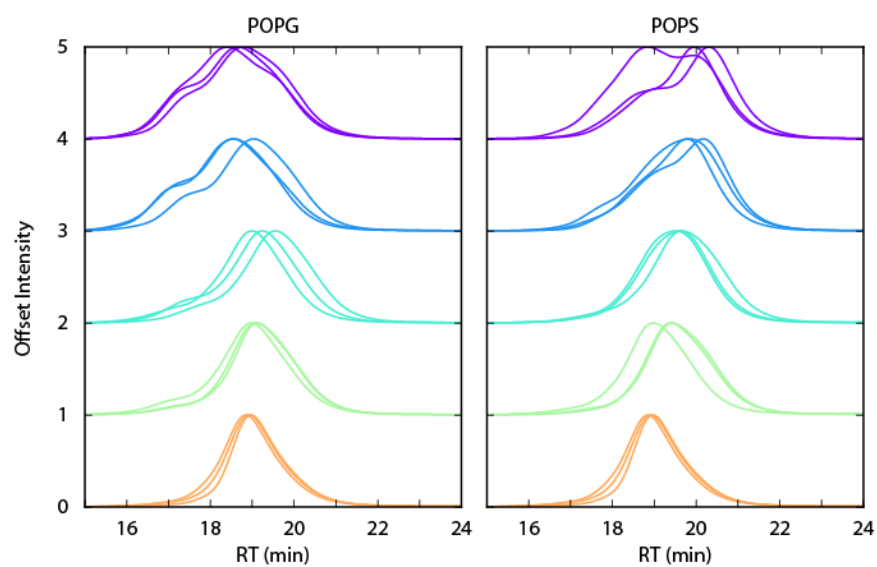
**Figure S1.** Deconvolution of representative mass spectrum. Raw mass spectrum (A) of a POPC Nanodisc at 80 V is deconvolved into an array of mass and charge (E). Summing along the x-axis gives the charge distribution (B), and summing along the y-axis gives the mass distribution (D). C and F show the total mass distribution and charge distribution from 60 to 160 V. Highlighted areas correspond to B and D.



**Figure S2.** The total charge state distributions of Nanodiscs with 0% to 100% (*top to bottom*) POPG:POPC and POPS:POPC in positive polarity are shown in the *first and second columns* with the corresponding charge state distributions in the negative polarity shown in the *third and fourth columns*.



**Figure S3.** The total mass distributions of Nanodiscs with 0% to 100% (*top to bottom*) POPG:POPC and POPS:POPC in positive polarity are shown in the *first and second columns* with the corresponding mass distributions in the negative polarity shown in the *third and fourth columns*.



**Figure S4.** Size-exclusion chromatography traces of Nanodiscs with 0% to 100% (*bottom to top*) anionic lipid for POPG (*left*) and POPS (*right*) as measured on a Superdex 200 3.2/300 column equilibrated with 0.2 M ammonium acetate (pH 6.8).