Electronic Supplimentary Information

1.0 Gas Phase Chromatography (GPC) Analysis for Polystyrene maleic acid (PSMA) polymer synthesis

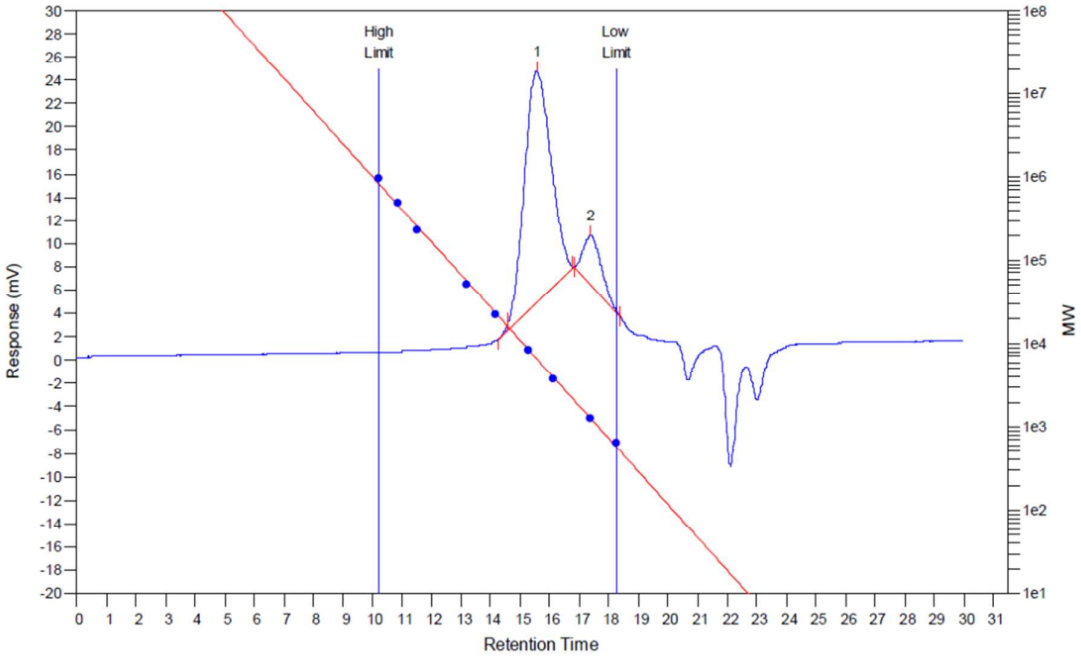

Figure A- GPC profile showing the retention time of the synthesised polystyrene maleic acid polymer compared to a standard of polystyrene at a known molecular weight (red line, blue dots). The sample peaks are designated as 1 and 2.

GPC was used to confirm the average molecular weight of the polymer used to form nanodiscs. The retention time of the polymer was compared to polystyrene of a known molecular weight (red line, blue dots). The relevant sample peaks are shown as peaks 1 and 2. The plot shows that the average molecular weight of the synthesised polymer is 6.7 kDa with a polydispersity of 1.14.

2.0 Proton NMR analysis of polystyrene maleic acid polymer

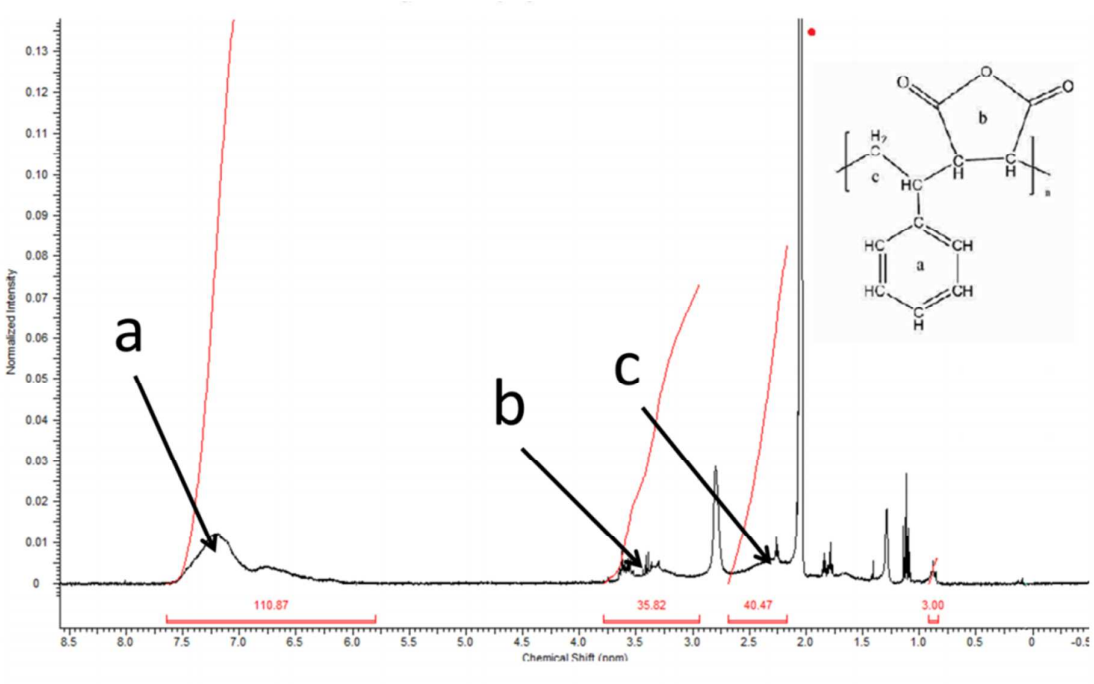

Figure B- ^{1}H NMR spectrum of the synthesised polystyrene maleic acid polymer in d-acetone. The solvent peak is shown with a red dot.

The NMR spectrum shows three prominent peaks associated with different regions of the polymer. The peak at 7.25 ppm is responsible for the hydrogen atoms on the aromatic region of styrene units (a). Peaks between 0-4 ppm are designated as the protons in the aliphatic region (b) of maleic anhydride and styrene (c). These peaks can be integrated and the ratio of styrene:maleic anhydride units calculated through knowledge of the integration value of 1 styrene proton on the aromatic region and one proton on the maleic anhydride region. When calculated this yields a ratio of 2.2:1 styrene:maleic anhydride. This value is close to the predicted value of 2:1.

3.0 Dynamic Light Scattering data for nanodisc formation

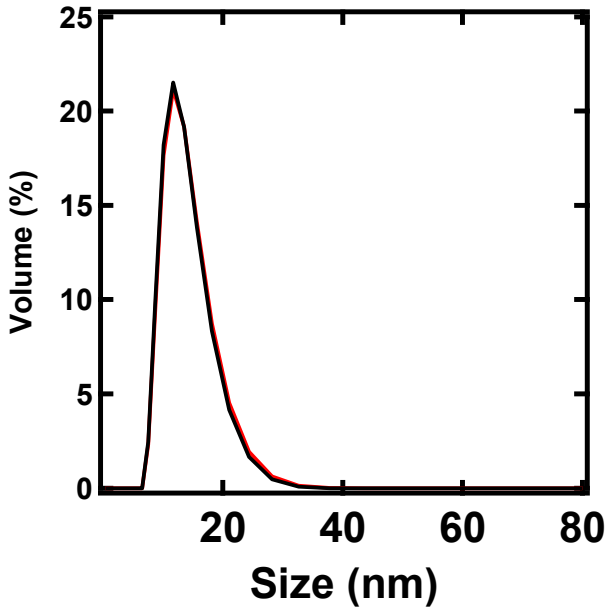

Fig C- Dynamic light scattering data for DMPC (black line) and 25 % DMPG:DMPC nanodisc formation. The only peak observed in the DLS profile is that of a 13 nm peak associated with nanodisc formation.