Electronic Supplementary Material (ESI) for Polymer Chemistry.

SUPPORTING INFORMATION

Degradable Cross-linked Polymer Vesicles for the Efficient Delivery of Platinum Drugs

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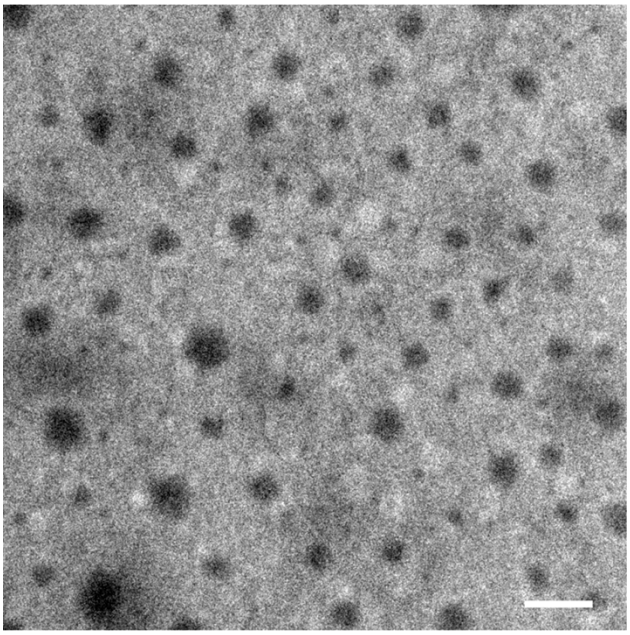
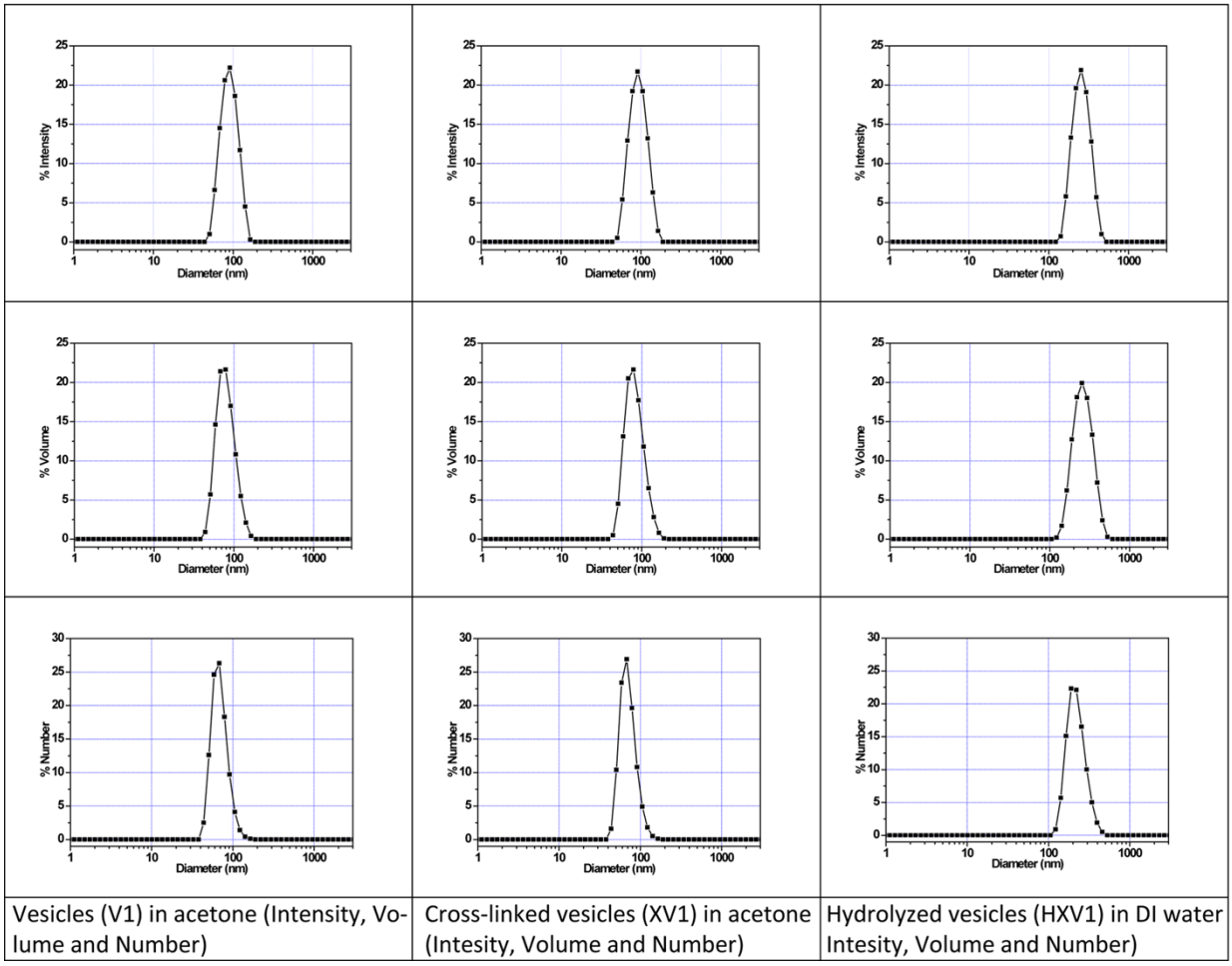


Figure S1. TEM images for the polymeric vesicles in acetone with positive staining. The scale bar represents 200 nm.



Samples	D_h(Intensity) (nm)	D_h(Volume) (nm)	D_h(Number) (nm)	DLS PDI	(cryo)TEM (nm)
V1 in acetone,	95	83	71	0.032	~ 80
XV1 in acetone,	96	85	74	0.045	~ 80
HXV1 in DI water	255	264	211	0.093	~ 240

Figure S2. Summary of characterization data for cross-linked polymer vesicles measured by DLS and (cryo)TEM.

The platinum conjugation efficiency to the cross-linked vesicles was determined by TGA and is defined as follows:

$$f = \frac{m_{Pt,\exp}}{m_{Pt,theo}} \times 100\% = \frac{W_{Pt} / M_{Pt}}{W_{diacid} / M_{diacid}} \times 100\%$$

$$= \frac{18.2\% / 195}{\left[\left(81.8\% - \frac{18.2\% \times 34.1\%}{65.9\%}\right) \times \frac{164 \times 25}{164 \times 35 + \left(\frac{162}{2} - 18\right) \times 10 + 10000}\right] / 164} \times 100\% \quad \text{(S1)}$$

$$= 85.2\%$$

where $m_{Pt,\ exp}$ and $m_{Pt,\ theo}$ are the molar amount of Pt determined by experimental data and the theoretical molar amount with 100% conversion, respectively (assuming that one Pt molecule forms a complex with one diacid repeating unit); W_{Pt} is the weight percent of Pt measured by TGA; M_{Pt} is the molecular weight of Pt; W_{diacid} is the weight percent of diacid repeat units calculated by subtracting the weight percent of cross-linked units; M_{diacid} is the molecular weight of the diacid repeating unit.

The platinum loading content within the polymer nanoparticles is defined as:

$$Loading\ content = \frac{amount\ of\ loaded\ CDDP}{amount\ of\ nanocarrier + amount\ of\ loaded\ CDDP} \times 100\%$$

$$= \frac{10mg \times 85.2\%}{40mg + 10mg \times 85.2\%} \times 100\% = 17.6\% \quad \text{(S2)}$$