Electronic Supplementary Material (ESM):

Manganese (III) porphyrins complexed with P22 virus-like particles as T_1-enhanced contrast agents for magnetic resonance imaging (MRI)

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The additional figures provide supplementary data for further reference to accompany the manuscript.

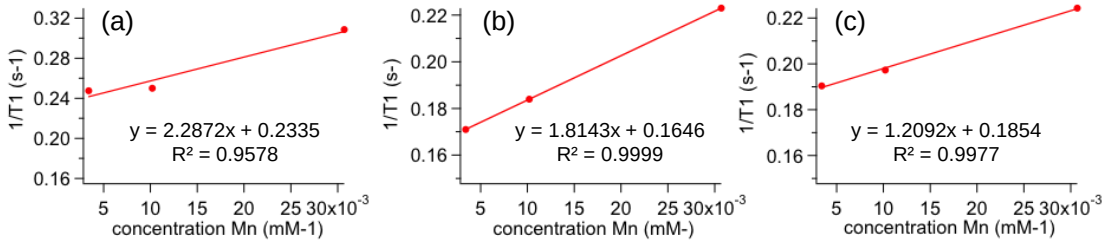

Figure S1: NMR T_1-measurements for P22-xAEMA-MnPP (1,200 MnPP/capsid) at 19 MHz (a), 90 MHz (b), and 300 MHz (c) showing R^2 value close to 1 indicating a good fit, with slope equal to ionic relaxivity.

Table S1. P22-VLPs conjugated to MnPP with calculated concentrations of MnPP inside P22 and r_2 / r_1 ratio based on different loading factors.

MnPP/capsid	Conc. MnPP inside capsid (mM)	$r_{2,ionic} / r_{1,ionic}$
90	1.09	17.09
121	1.46	9.91
155	1.88	4.94
437	5.29	3.65
719	8.70	2.48
778	9.42	2.51
1,072	13.0	2.18
1,201	14.5	1.75
2,578	31.2	1.54
3,236	39.2	1.48
3,646	44.1	1.32

Green = P22-MnPP w/o EDC, Pink = P22-xAEMA-MnPP w/o EDC, Orange = P22-MnPP w/EDC, White = P22-xAEMA-MnPP w/EDC

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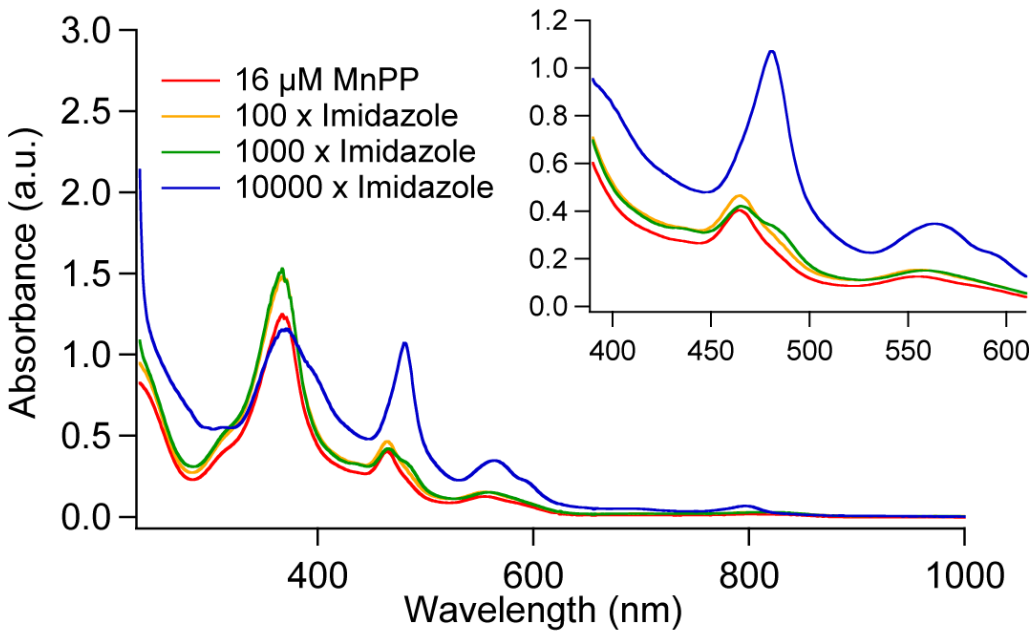

Figure S2: UV-VIS spectrum of imidazole added to free MnPP **(red)** at molar excess 100 **(orange)**, 1000 **(green)**, and 10000 **(blue)** excess. **Inset:** The appearance of the peak at 482 nm indicates binding of imidazole to MnPP.