

# Polydopamine Modified Superparamagnetic Iron Oxide Nanoparticles as Multifunctional Nanocarrier for Targeted Prostate Cancer Treatment

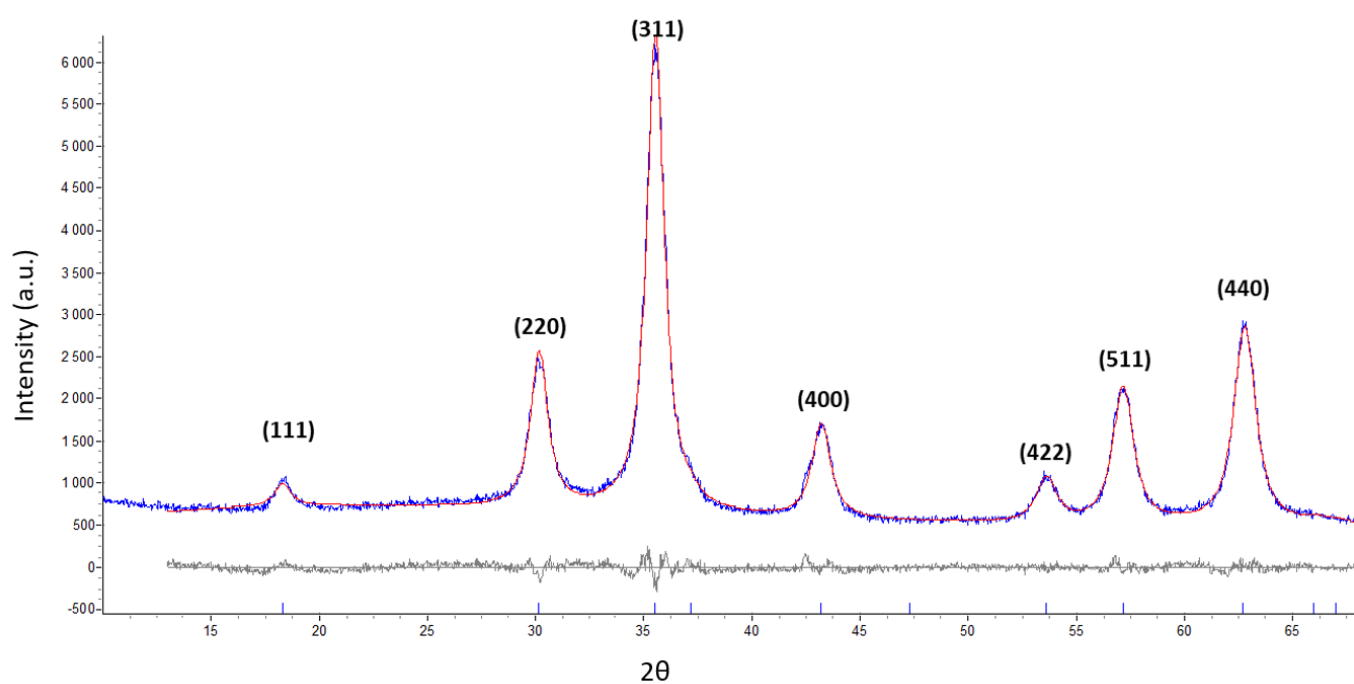


Figure S1. XRD pattern of the bare IONPs ( $\lambda = 1.540598 \text{ \AA}$ ).

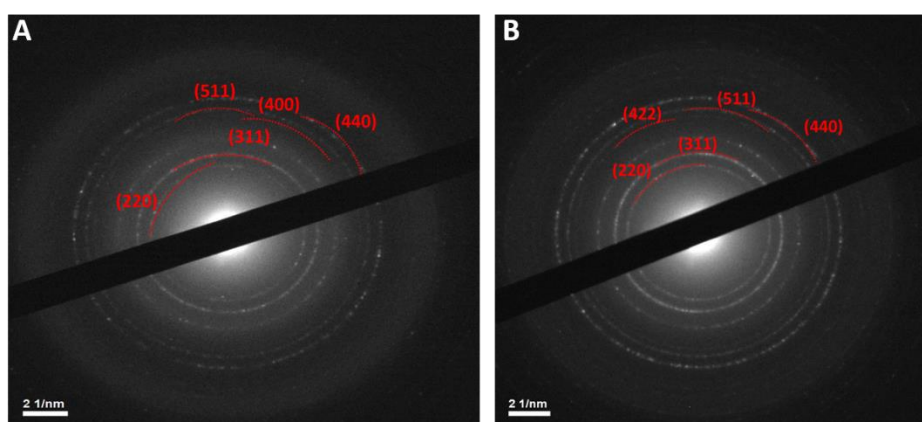
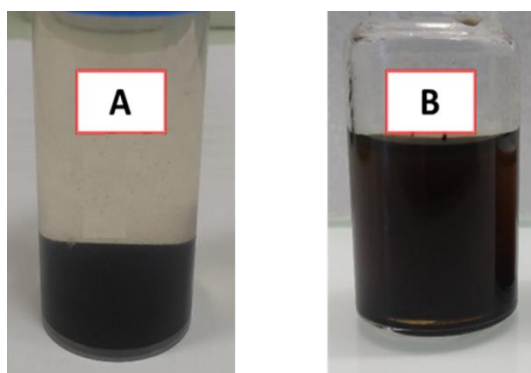
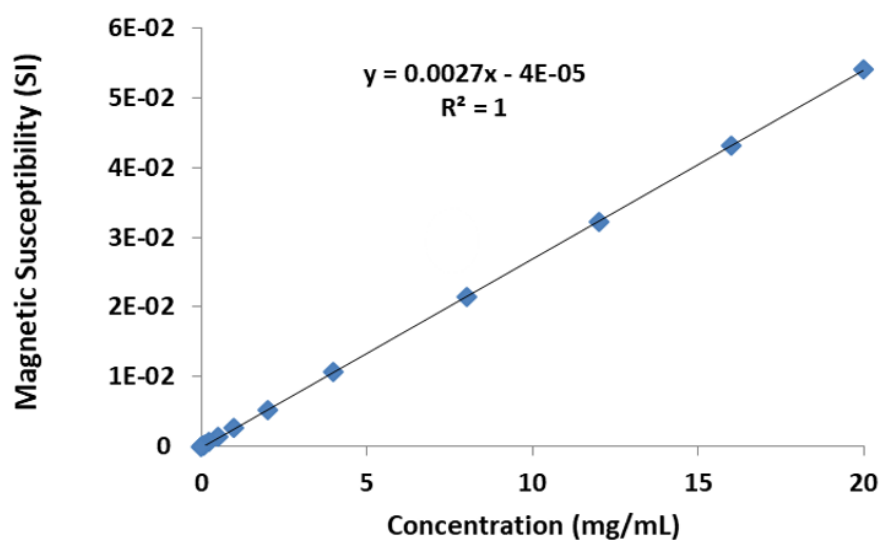


Figure S2. SAED patterns obtained *via* TEM analyses of A. bare IONPs and B. pDA-IONPs.



**Figure S3.** Suspension images of (A). pDA-IONPs and (B). GSSG-pDA-IONPs after 24 h in PBS (10 mM, pH 7.4)



**Figure S4.** Calibration curve showing the magnetic susceptibility vs. concentration of bare IONPs. Measurements were carried out in deionized water at pH 5.0-6.0.

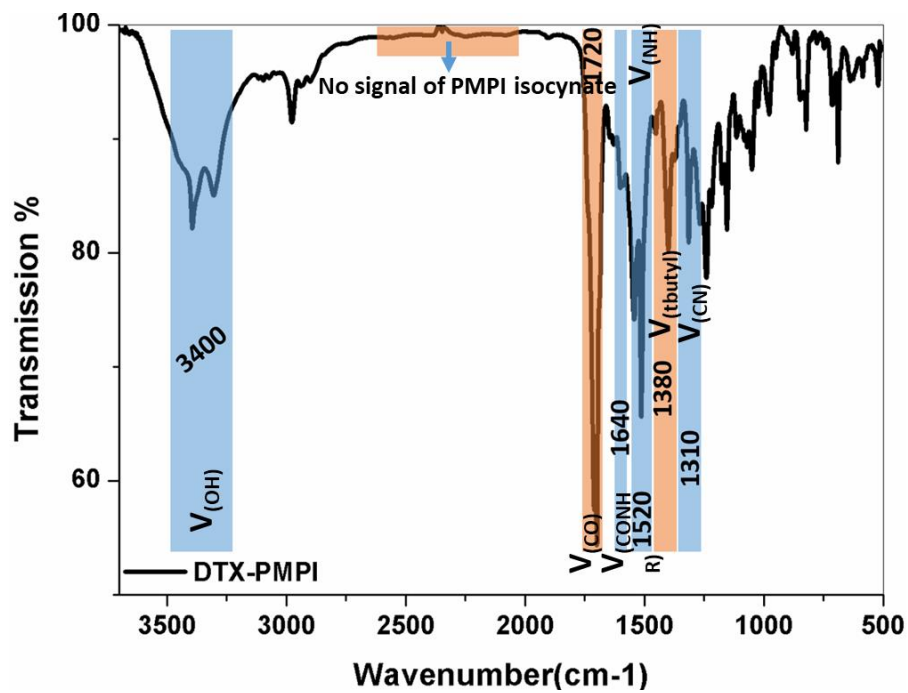


Figure S5. FTIR spectrum of the prepared DTX-PMPI.

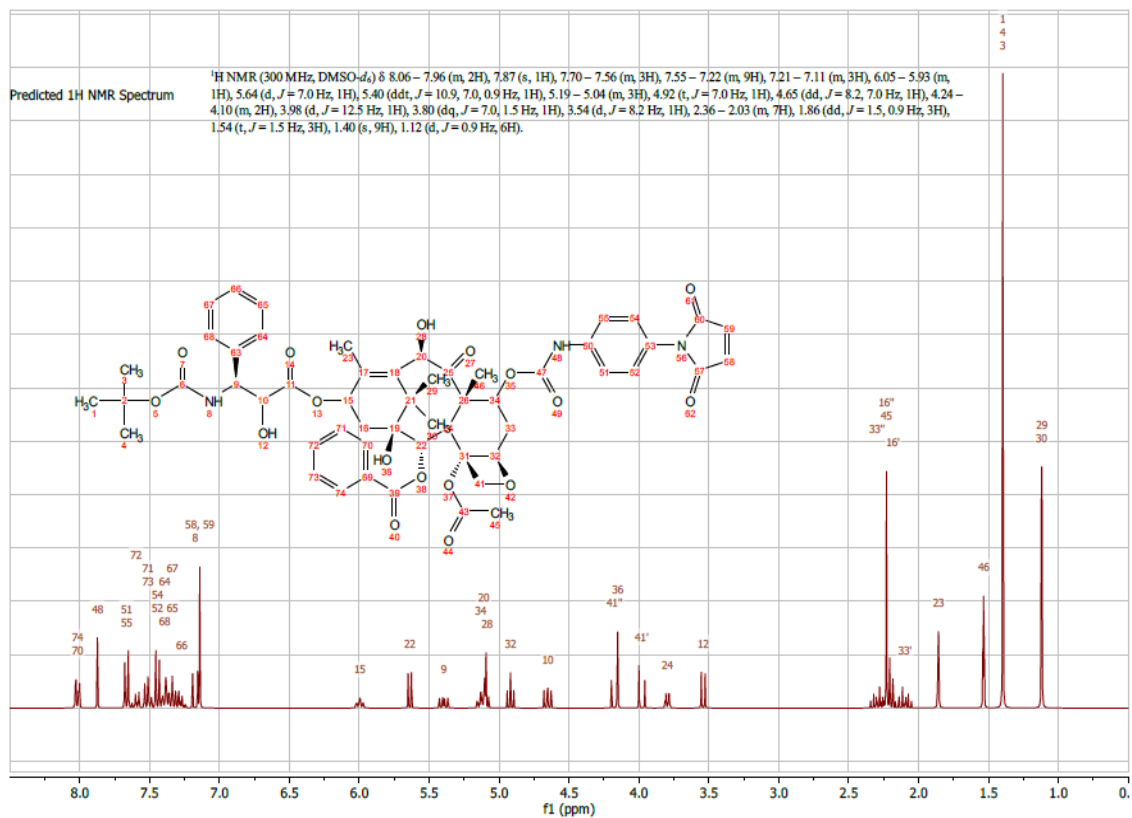
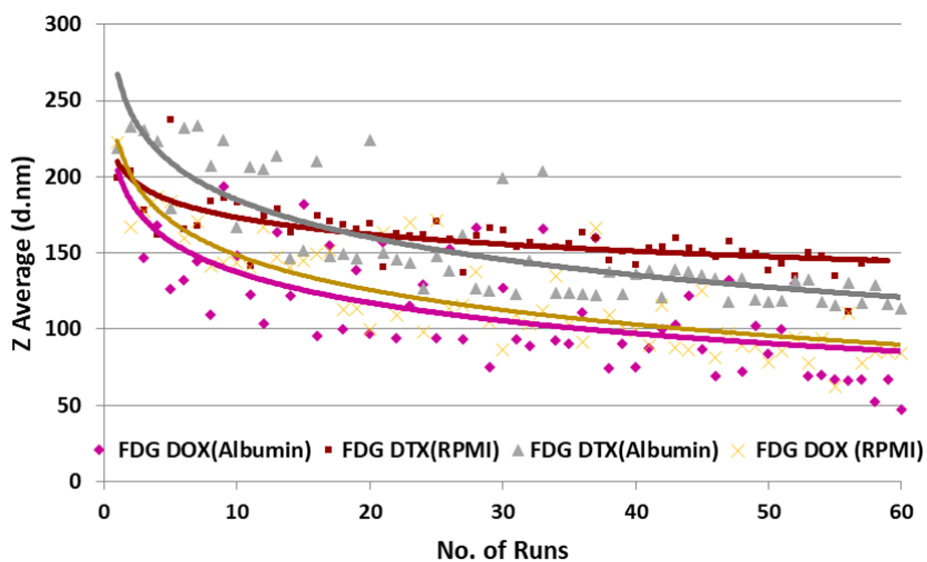
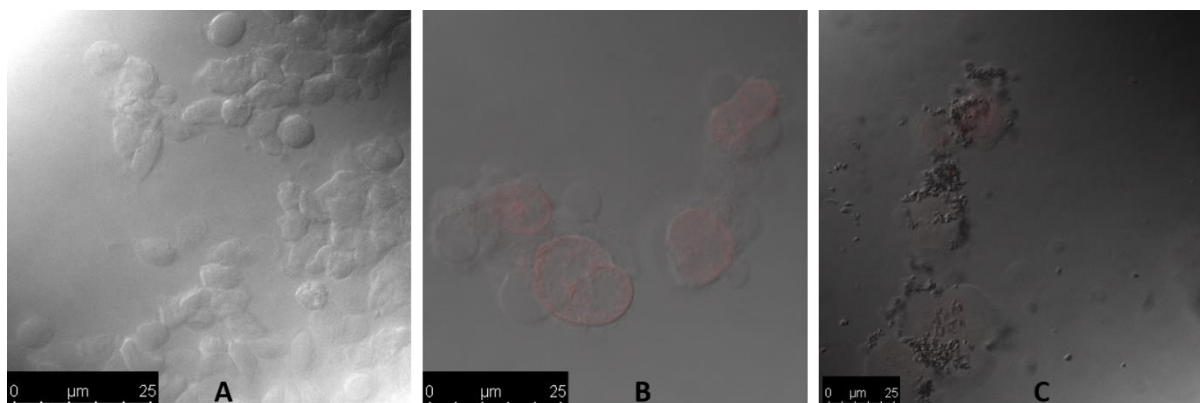


Figure S6.  $^1H$ -NMR predicted spectrum of DTX-PMPI.



**Figure S7.** DLS size measurements to check the colloidal stability of the developed nanoparticles drug loaded FDG (GSH-pDA-SPIONs) in biological media (RPMI and albumin in NaCl) at 37 °C.



**Figure S8.** Confocal images of PC3 cell lines with A. no treatment, B. only DOX and C. DOX loaded nanoparticles.

**Table S1.** Comparative chart showing the drug loading efficiencies of doxorubicin and docetaxel, calculated using different method.

Sr. No	Loading Method (DOX)	Loading %	Loading Method (DTX)	Loading %
1.	UV-vis spectroscopy	< 50 <sup>1</sup>	HPLC	~ 40 <sup>2</sup>
2.	UV-vis spectroscopy	68 <sup>3</sup>	HPLC	9 <sup>4</sup>
3.	UV-vis spectroscopy	2.5 <sup>5</sup>	HPLC	67.5 <sup>6</sup>
4.	UV-vis spectroscopy	76 <sup>7</sup>	HPLC	~ 23 <sup>8</sup>
5.	UV-vis spectroscopy	72 <sup>9</sup>	HPLC	52.7 <sup>10</sup>
6.	UV-vis spectroscopy	6.5 <sup>11</sup>	HPLC	~ 8 <sup>12</sup>
7.	UV-vis spectroscopy	62 <sup>13</sup>	HPLC	~8.9 <sup>14</sup>

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