

**Glioma-targeted Dual Functionalized Thermosensitive Ferri-Liposomes for Drug Delivery  
through an *in vitro* Blood-brain Barrier**

Di Shi<sup>1</sup>, Gujie Mi<sup>1</sup>, Yan Shen<sup>2</sup> and Thomas J Webster<sup>1</sup>

<sup>1</sup>Chemical Engineering Department, Northeastern University, Boston, MA 02115, USA

<sup>2</sup>State Key Laboratory of Natural Medicines, Department of Pharmaceutics, China  
Pharmaceutical University, 24 Tongjiaxiang, Nanjing 210009, China

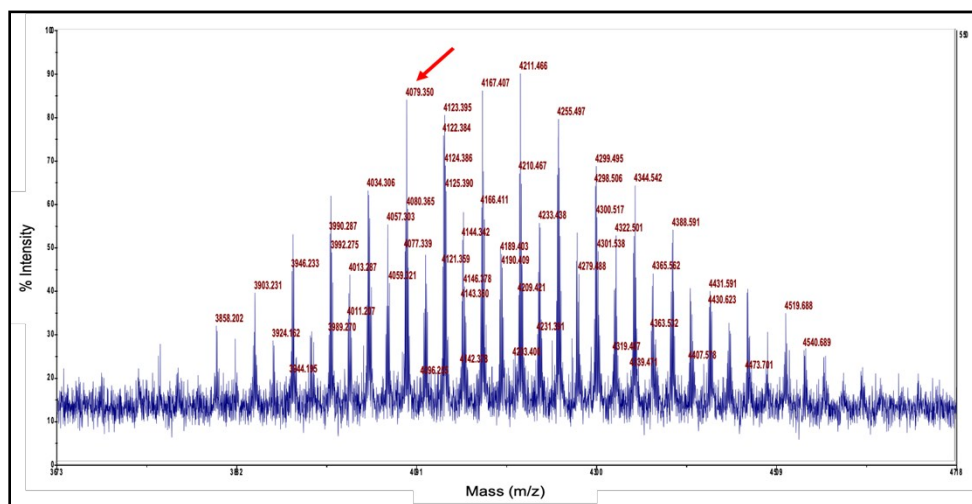


Figure S1. MALDI-TOF Mass Spec of Conjugated DSPE-PEG<sub>2000</sub>-P1NS (MW= 4078.6).

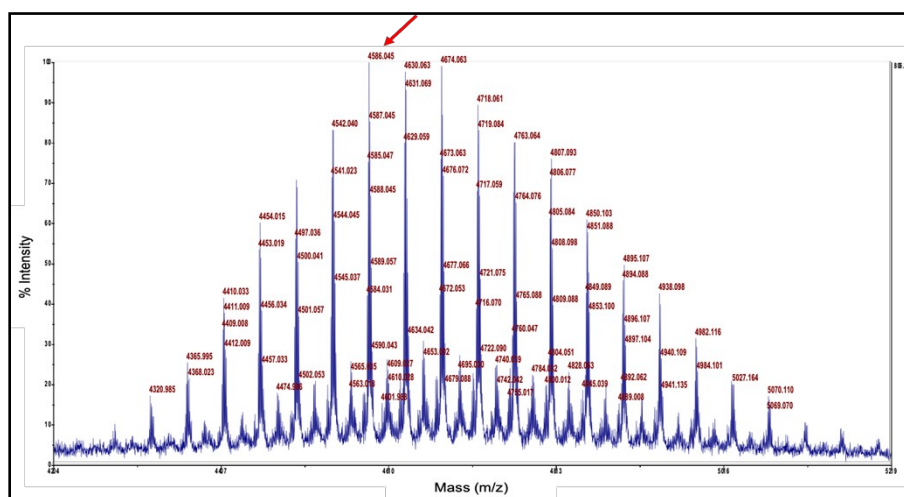


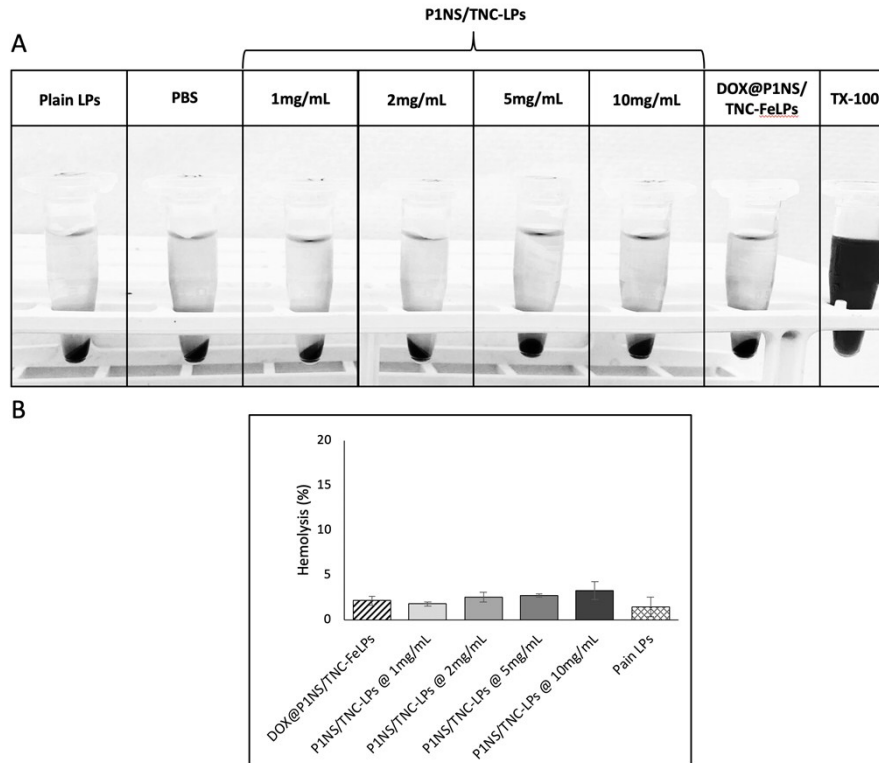
Figure S2. MALDI-TOF Mass Spec of Conjugated DSPE-PEG<sub>2000</sub>-TAT (MW= 4587.6).

**Table S1. DLS and Zeta Potential Data**

<b>Samples</b>	<b>Size (nm)</b>	<b>Polydispersity Index (PDI)</b>	<b>Zeta (mV)</b>
<b>Plain LPs</b>	120.2 ± 0.31	0.149 ± 0.04	-1.69 ± 2.73
<b>Non-PEGyated P1NS/TNC-FeLPs</b>	103.7 ± 0.83	0.171 ± 0.02	2.26 ± 2.41
<b>PEGyated P1NS/TNC-FeLPs</b>	114.2 ± 0.48	0.218 ± 0.07	-4.85 ± 3.03
<b>PEGyated P1NS/TNC-FeLPs after 5 weeks</b>	107.9 ± 0.64	0.192 ± 0.05	---

**Table S2. DLS results for liposomes incubated at pH4.5 and pH 7.4**

<b>Time (hrs)</b>	<b>pH 4.2</b>		<b>pH 7.4</b>	
	<b>Average Diameter (nm)</b>	<b>PDI%</b>	<b>Average Diameter (nm)</b>	<b>PDI%</b>
1	138.2	19.9	159.6	23.6
4	147.5	25.6	137.0	26.1
8	120.7	24.9	146.6	30.9



**Figure S3.** Hemolysis results for different liposome compositions. (A) Photo images of vials containing supernatant from rat erythrocytes (red blood cells) exposed to different concentrations of P1NS/TNC-LPs and/or DOX@P1NS/TNC-FeLPs at experimental concentration. (B) Hemolysis (%) of erythrocyte incubated with different liposomal compositions at varying concentrations. Less than 10% hemolysis was considered nontoxic.