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Supporting Information
Of

Exploring the membrane fluidity of phenyl boronic acid functionalized polymersomes using FRAP technique and application in pH sensitive release of curcumin

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Contents:

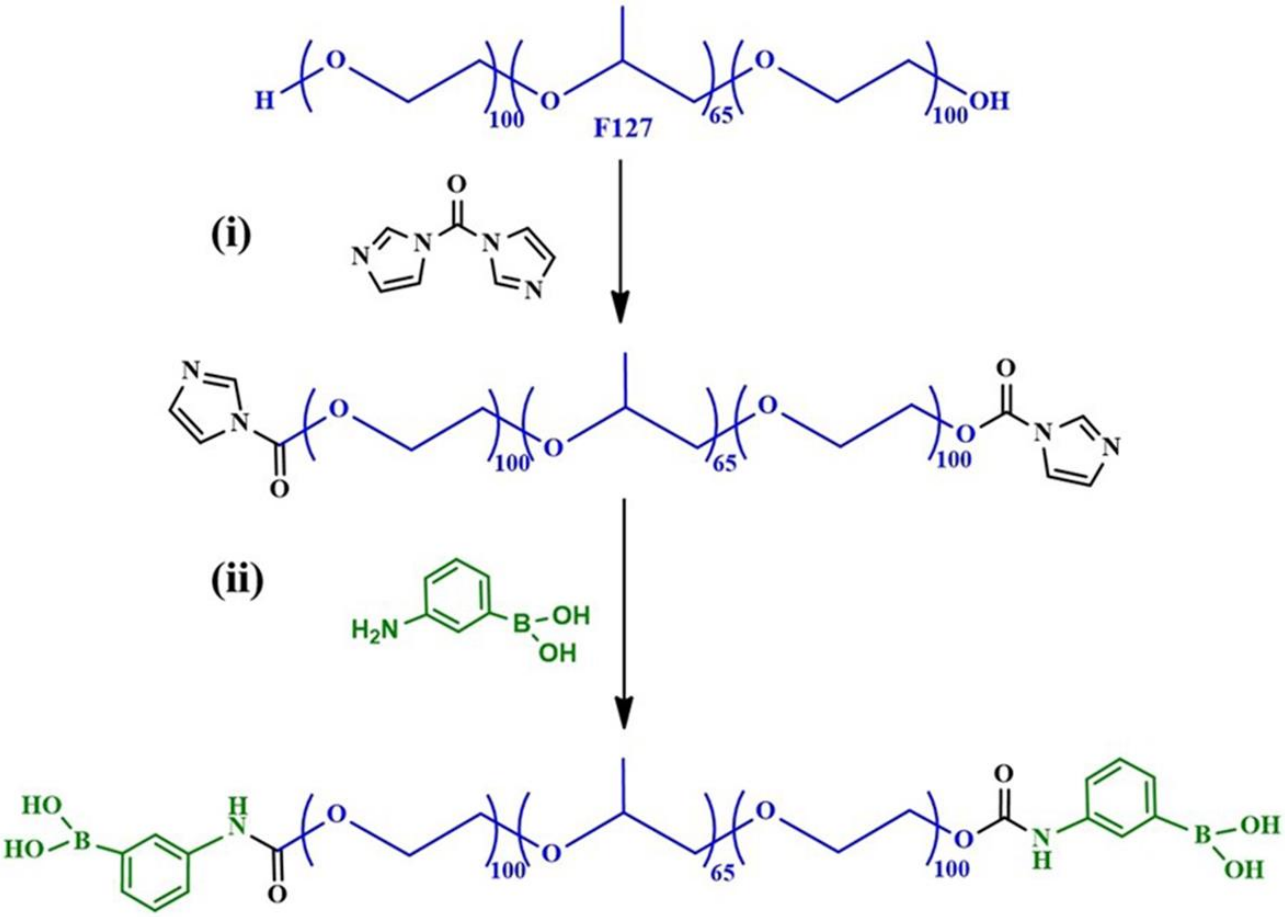

Figure S1. Synthetic route of active-targeting pluronic copolymer (F127-PBA); Reaction conditions: (i) anhydrous dichloromethane; (ii) dimethyl sulfoxide, 0.2% DMAP, at room temperature for 48 h.

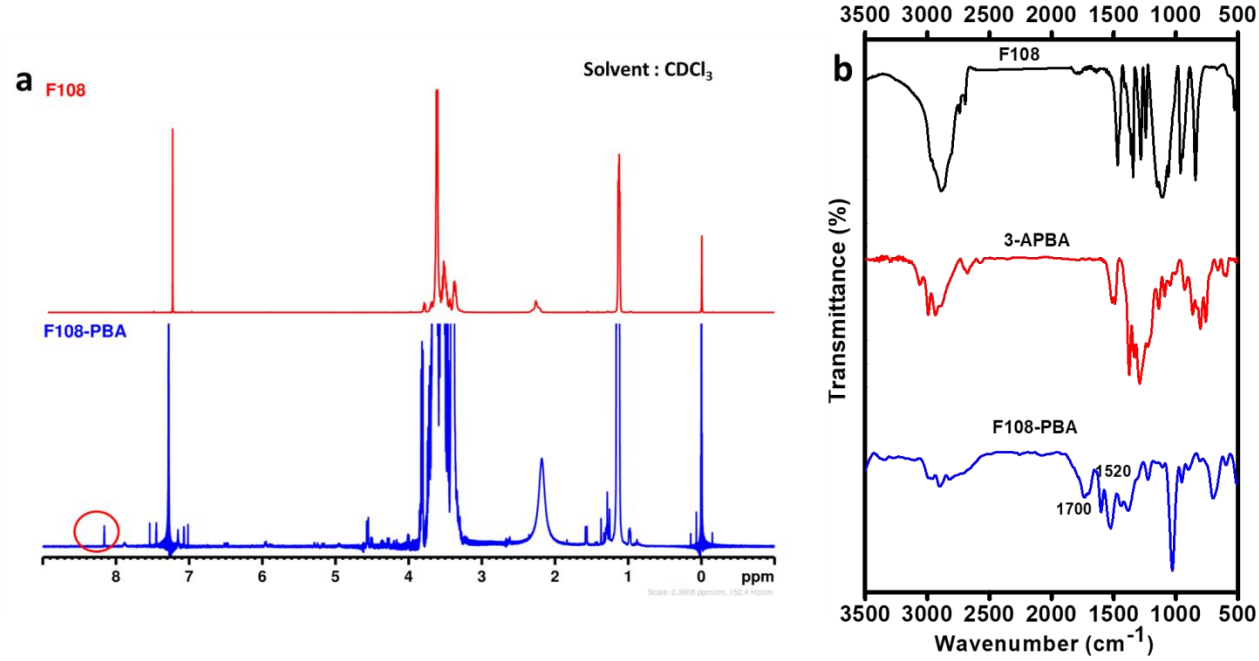

Figure S2. (a) ^{1}H NMR spectra of F108 and F108-PBA, and $CDCl_3$ was used as the solvent. (b) FTIR spectra of F108, 3-APBA and F108-PBA. Red circle indicates the peak at δ: 8.2 ppm corresponding to proton of (–B(O*H*)$_2$).

Videos S1-S5: Given separately as individual files**.**

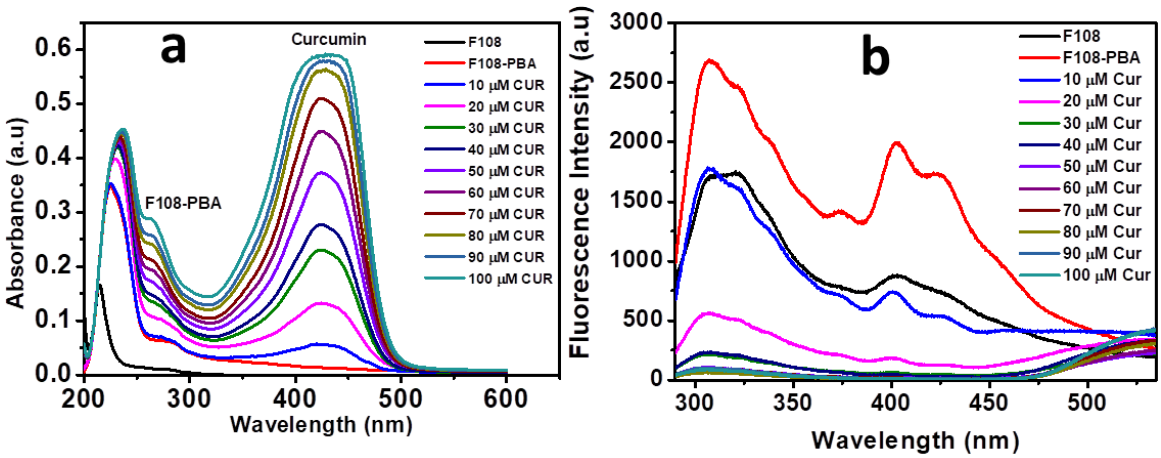

Figure S3. (a) UV-Vis absorption and (b) Fluorescence spectra of F108-PBA in the presence of different concentration of curcumin in aqueous medium.

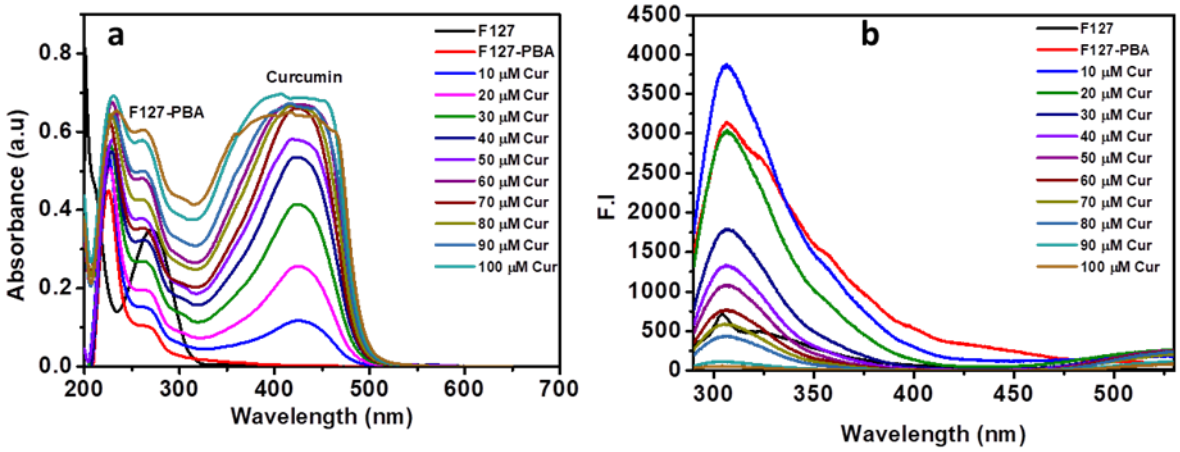

Figure S4. (a) UV-Vis absorption and (b) Fluorescence spectra of F127-PBA in the presence of different concentration of curcumin in aqueous medium.

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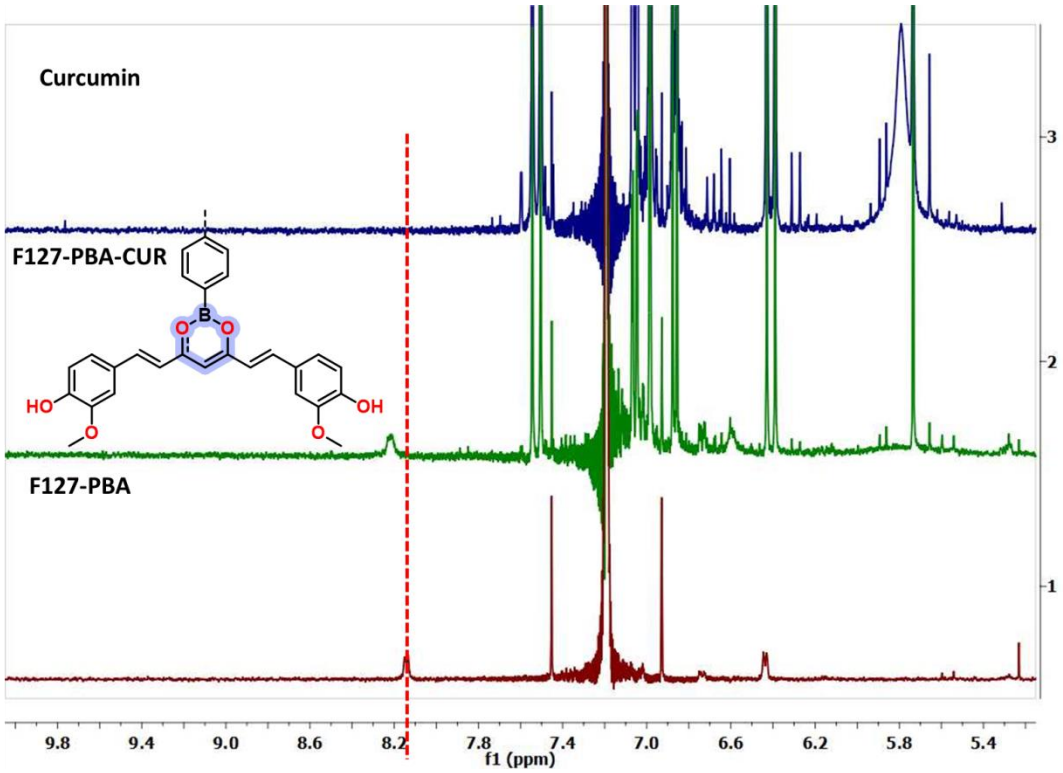

Figure S5. ^{1}H NMR spectra of F127-PBA, curcumin and the complex.

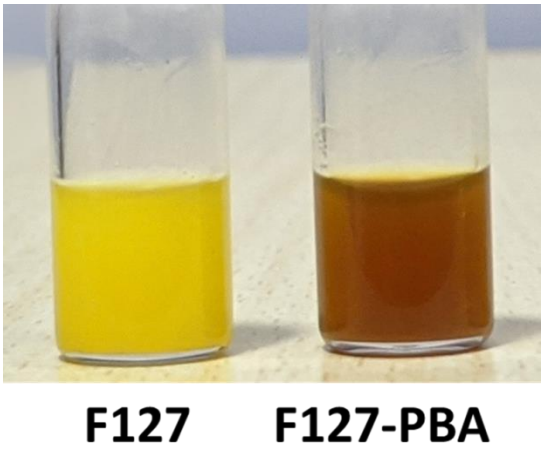

Figure S6. Photograph of F127 and F127-PBA polymersomes solutions loaded with curcumin.

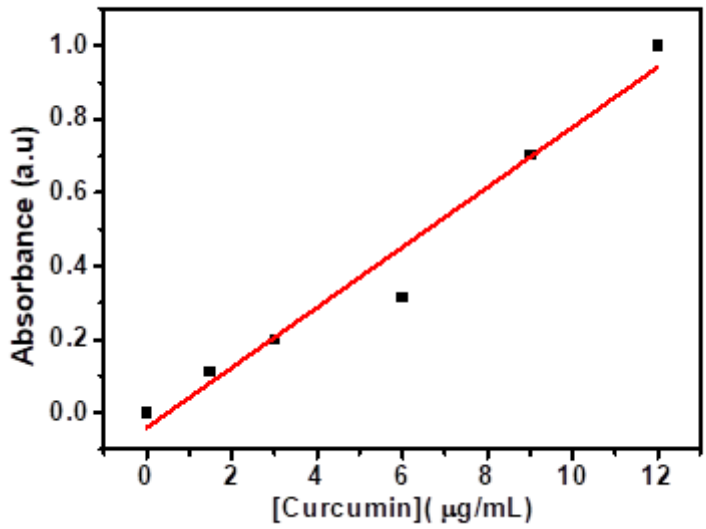

Figure S7. Calibration of curcumin using 50%(v/v) methanol as the solvent.

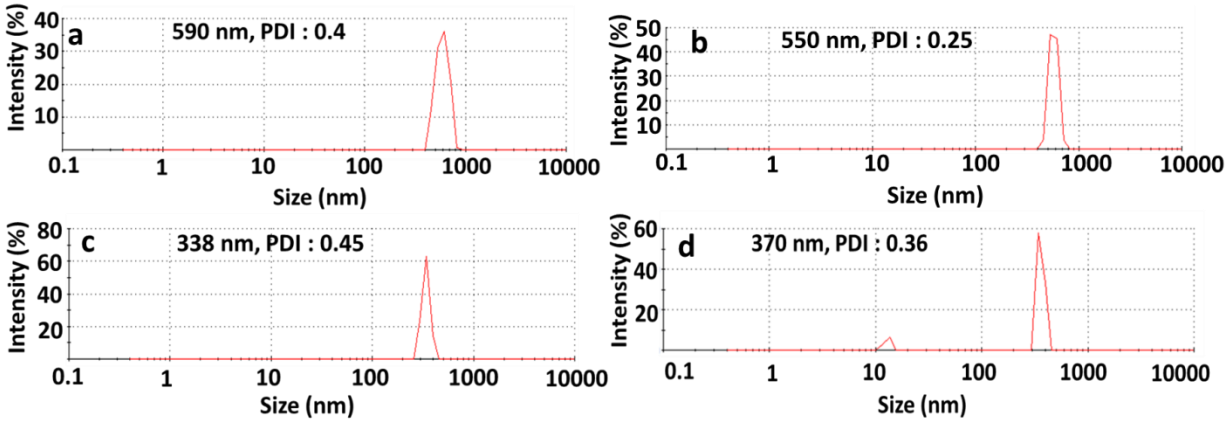

Figure S8. DLS data of vesicles loaded with curcumin (a) F127 (b) F108 (c) F127-PBA(d) F108-PBA.

Method S1: HPLC procedure for curcumin determination

All the analysis of curcumin was determined by a (UFLC, Shimadzu, Japan) instrument system with a RP-18 column (shiseido C18; 150 mm length × 4.6 mm width; 5 μm particle size) with an isocratic pump (Shimadzu-LC-20AD prominence) and an autosampling device (Shimadzu-SIL-20A prominence). The detection was performed using a UV detector (Shimadzu UV-Vis Abs). The curcumin samples were analysed according to the following method: isocratic method (50% of water with 2% of acetic acid (A) and 50% acetonitrile (B) and with a flow-rate of 1 mL/min. Detection was at 427 nm and the run time of 15 minutes. The curcumin retention time was 7.8 minutes. Injection volume was 20 μL.