

Supplementary Information (ESI) for RSC Advances

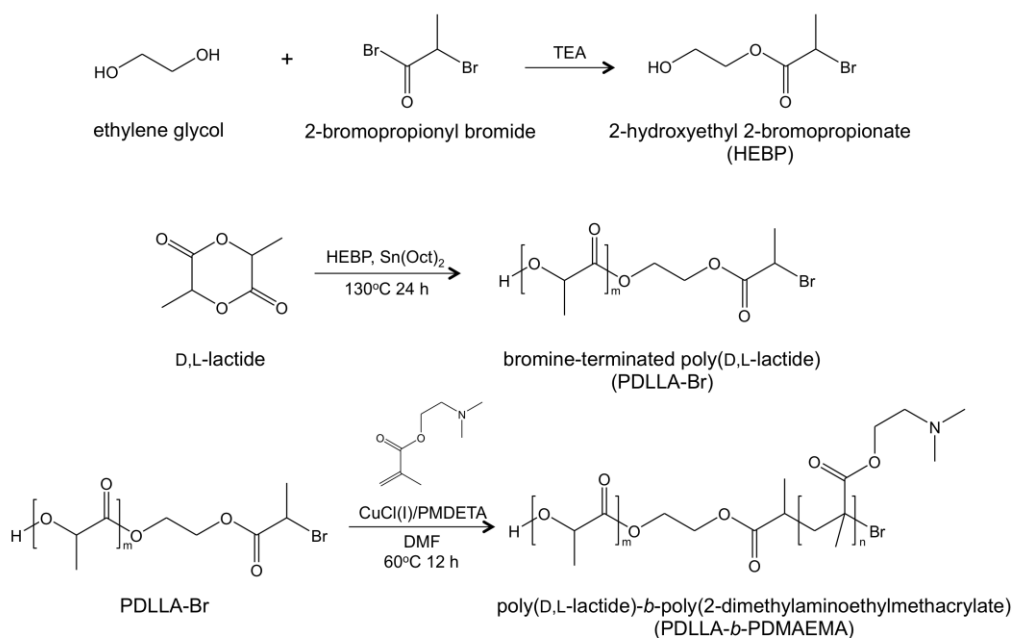
## Supplementary Information

### Monodisperse polylactide microcapsules with a single aqueous core prepared via spontaneous emulsification and solvent diffusion

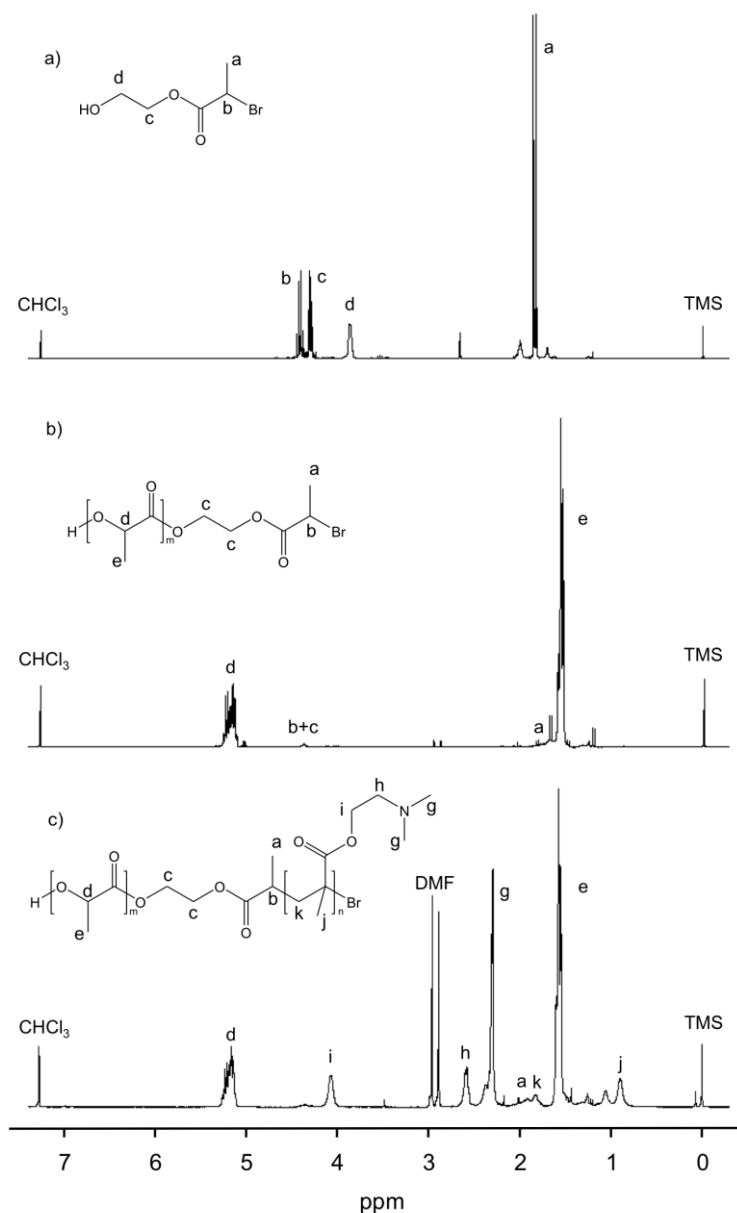
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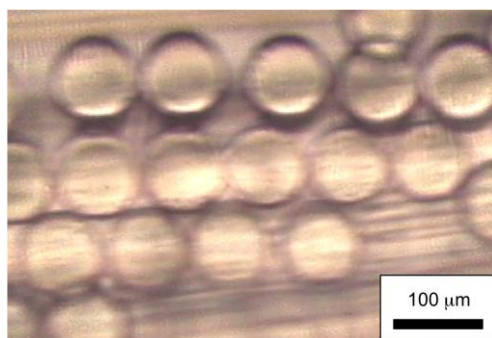
Scheme S1 Synthesis of poly(D,L-lactide)-*b*-poly(2-dimethylaminoethylmethacrylate).



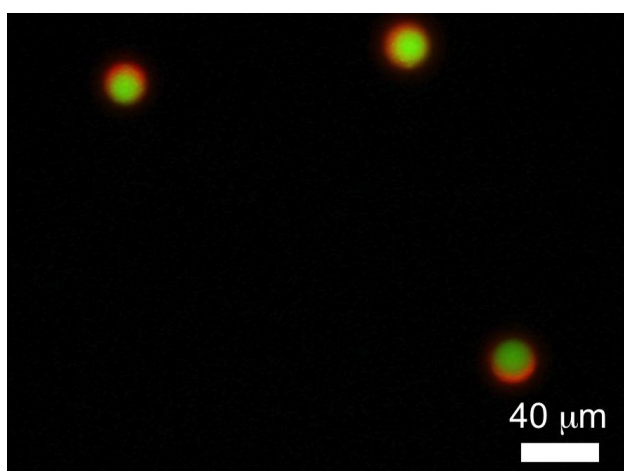
**Figure S1** <sup>1</sup>H NMR spectra of (a) HEBP, (b) PDLLA-Br, and (c) PDLLA-*b*-PDMAEMA in CDCl<sub>3</sub>.

**Table S1** Synthetic result of PDLLA-*b*-PDMAEMA

Sample	<i>M</i> <sub>n</sub> (PDLLA block)	<i>M</i> <sub>n</sub> (PDMAEMA block)	<i>M</i> <sub>n</sub> (diblock)	<i>M</i> <sub>w</sub> / <i>M</i> <sub>n</sub>
PDLLA- <i>b</i> -PDMAEMA	9,600	6,600	16,200	1.28



**Figure S2** Optical micrograph of monodisperse oil droplets dispersed in the aqueous phase before solvent diffusion, captured in the Teflon tube connected from the outlet of the microfluidic device to the vessel containing water for solvent diffusion. The dispersed phase was an EA solution dissolving  $6 \text{ mg mL}^{-1}$  of PDLLA and  $4 \text{ mg mL}^{-1}$  of PDLLA-*b*-PDMAEMA. The continuous phase was an aqueous solution saturated with EA containing 1 wt% of w-PEG-*b*-PDLLA. The flow rates were  $Q_d = 120 \text{ } \mu\text{L h}^{-1}$ ,  $Q_c = 3.0 \text{ mL h}^{-1}$ .



**Figure S3** Fluorescence microscopic image of monodisperse microcapsules with containing fluorocein in the core and Nile red in the shell.