Title:	Enzymatic hydrolysis of poly (L-lysine) at the interface of cholesteric liquid crystal droplets
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Abstract:	In our project, we have investigated the enzymatic hydrolysis activity of trypsin at the interface of poly(L-lysine) (PLL)-coated liquid crystal (LC) by utilizing the surface of cholesteric liquid crystal (CLC) droplets. Cholesteric liquid crystal (CLC) droplets in the presence of Phosphate- buffered saline (PBS) exhibited concentric rings with their center coinciding with the center of the droplet (on center confinement). We observed the structural changes in PLL-coated CLC droplets from on-center confinement to off-center confinement of concentric rings due to the electrostatic interactions between positively charged PLL and negatively charged 5CB liquid crystal. The PLL-coated CLC droplets preincubated with trypsin exhibited reformation of concentric rings with their center coinciding with the center of the CLC droplet (on center confinement). Trypsin catalyzes the hydrolysis of PLL adsorbed at the CLC droplet and breaks it into smaller fragments, thus notably decreasing the electrostatic interactions between liquid crystal 5CB and PLL. Second, we observed the positioning of micrometer-sized fluorescent polystyrene (PS) particles adsorbed on the PLL-coated CLC droplets before and after the addition of trypsin using epifluorescence microscopy.
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