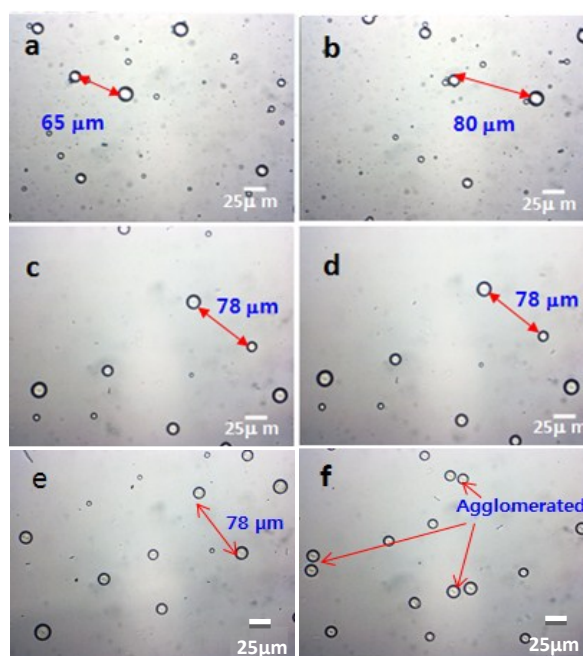


## Supplementary materials

### Immobilization and positional stability of LC microdroplets on slide cover glasses

To confirm the immobilization and positional stability of LC microdroplets on slide cover glasses, the optical microscopic images of slide cover glass immobilized and free LC microdroplets on slide cover glass were captured at 1 min, 10 min and after 24 h to determine positional and storage properties of free and immobilized LC microdroplets on cover glass. (Fig S1). The optical microscopic images of free and immobilized LC microdroplets at zero time and after 10 min have indicated a significant increase in separation in free microdroplets from initial separation of 65  $\mu\text{m}$  (Fig.S1a) to approximately 80  $\mu\text{m}$  (Fig.S1b) within a time interval of 10 min. On the other hand, the separation between two immobilized LC microdroplets remained constant (78  $\mu\text{m}$ ) after a different time interval (Fig. S1c, d, e).

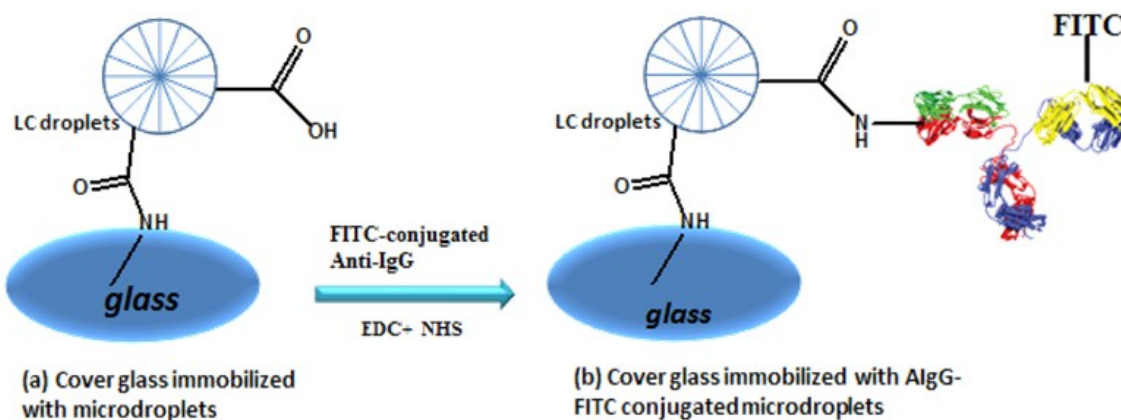


**Fig. S1** Optical microscopic images of free (a, b,f) and immobilized (c, d,e) LC microdroplets on slide cover glass at 0 min (a, c), 10 min (b, d), and 24 h (e ,f).

This result has indicated that immobilized LC microdroplets were having positional stability on cover glass as compared to free LC microdroplets, which on storing have shown variation in their position (Fig.S1 a,b) and agglomeration on storing for 24 h (Fig. S1 f).

#### **Anchoring of AIgG-FITC conjugate on LC microdroplets immobilized on slide cover glasses.**

The synthesized AIgG-FITC conjugate was anchored on slide-cover-glass-immobilized LC microdroplets by incubating AIgG-FITC conjugate for about 4 h at 25°C in presence of calculated amount of activating agent. The anchoring of AIgG-FITC conjugate on LC microdroplets did not influence the orientational state of 5CB molecules (Scheme S1) but 5CB molecules in LC microdroplets remained in radial configuration as found with free and AIgG unconjugated LC microdroplets.



**Scheme S1.** Anchoring of AIgG-FITC conjugate on LC microdroplets immobilized on slide cover glasses.

### **Caption for Supplementary Scheme and Figure**

**Scheme S1.** Anchoring of AIGG-FITC conjugate on LC microdroplets immobilized on slide cover glasses.

**Fig. S1** Optical microscopic images of (a, b, f) free and immobilized (c, d,e) LC microdroplets on slide cover glass at 0 min (a, c), 10 min (b, d), and after 24 h (e ,f).