

Electronic Supplementary Material (ESI) for *J. Mater. Chem. C*

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**Ionic Liquid Crystalline Based on Amino Acid and Gemini Surfactant:
Tunable Phase Structure, Circularly Polarized Luminescence and
Emission Color**

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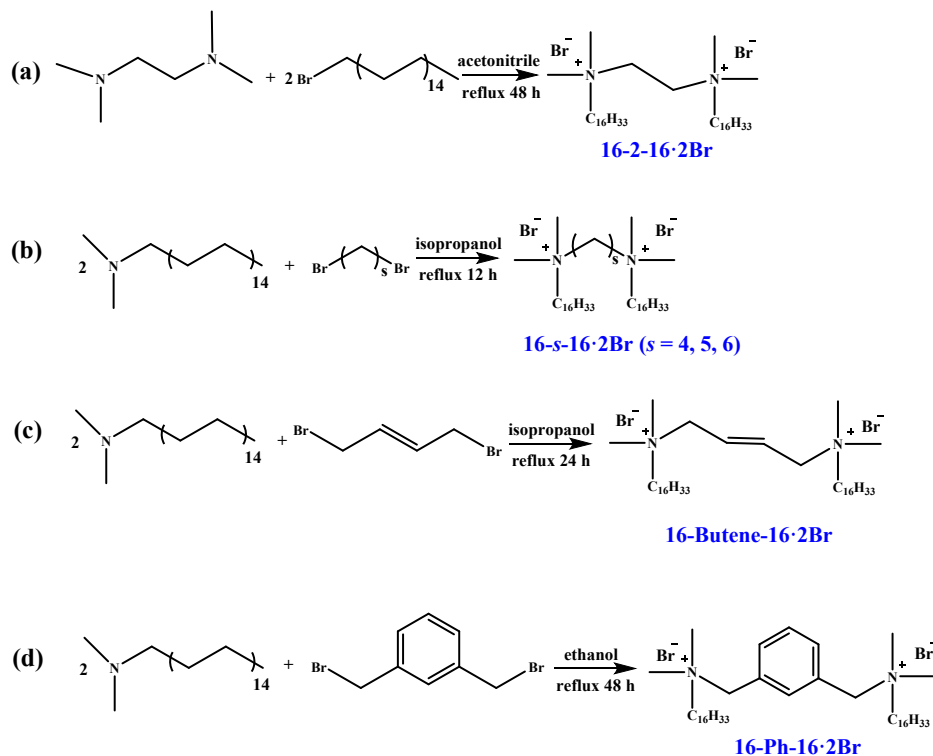


Figure S1. Synthesis routes and abbreviations of Gemini surfactants.

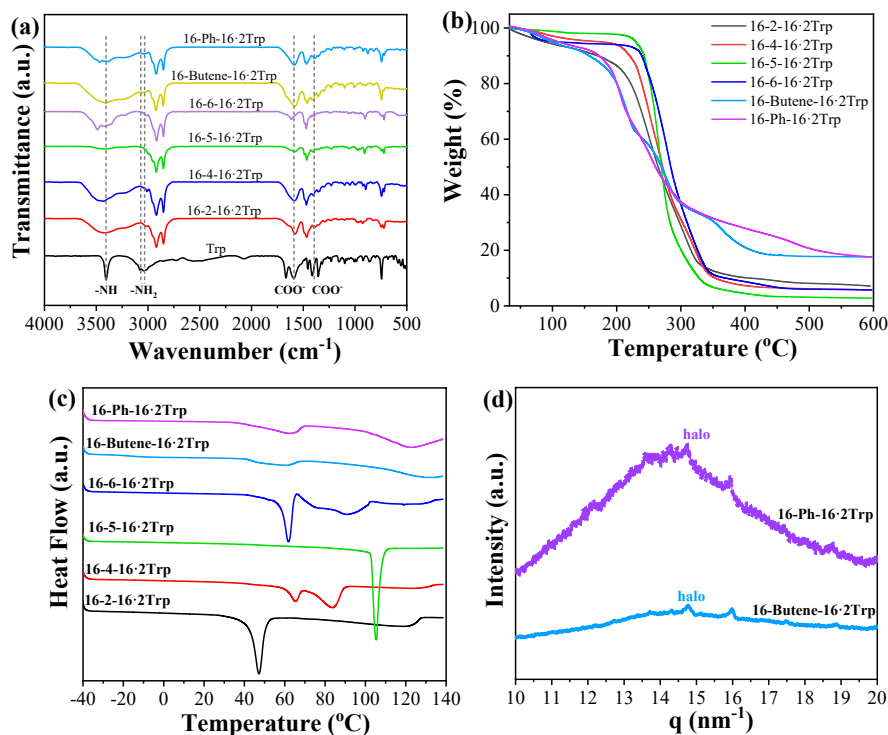


Figure S2. (a) FT-IR spectra, (b) TGA curve, and (c) DSC thermogram of luminescent complexes. (d) WAXS pattern of 16-Butene-16-2Trp, and 16-Ph-16-2Trp ILCs.

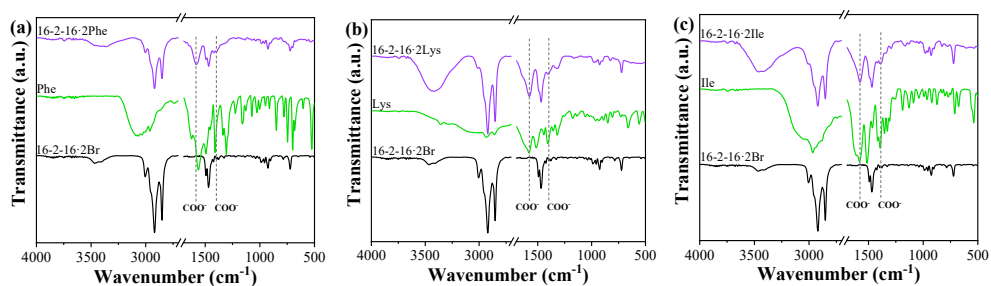


Figure S3. FT-IR spectra of natural amino acids and corresponding complexes.

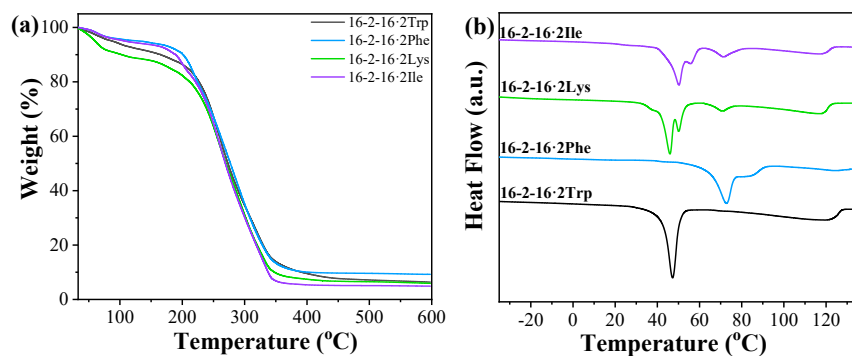


Figure S4. (a) TGA curve, and (b) DSC thermogram of luminescent complexes.

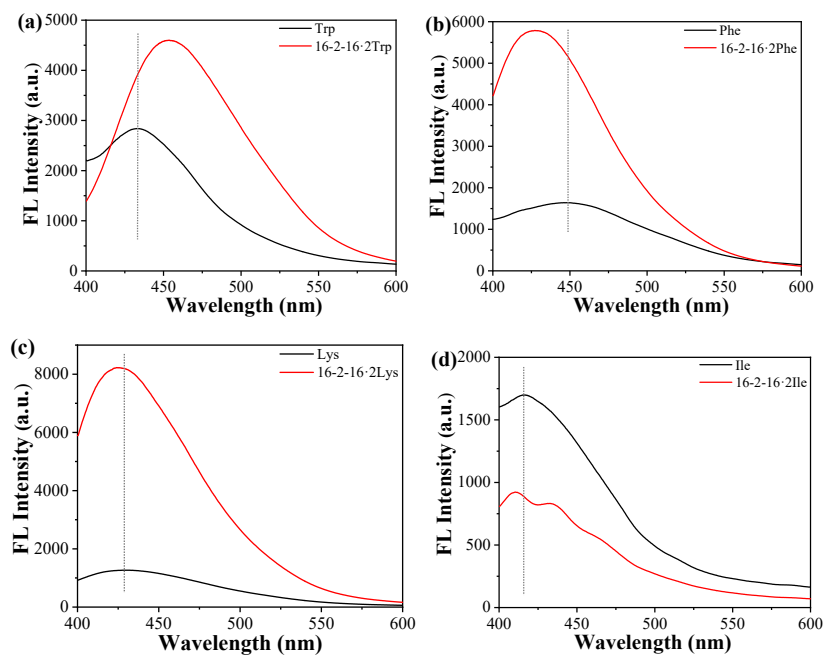


Figure S5. Fluorescent spectra of luminescent complexes and corresponding amino acids at 365 nm excitation.

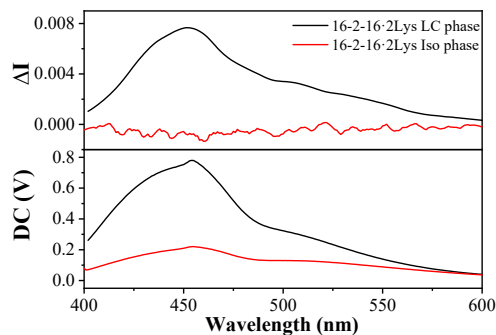


Figure S6. CPL spectra of 16-2-16·2Lys films measured at LC and Iso phases, respectively.

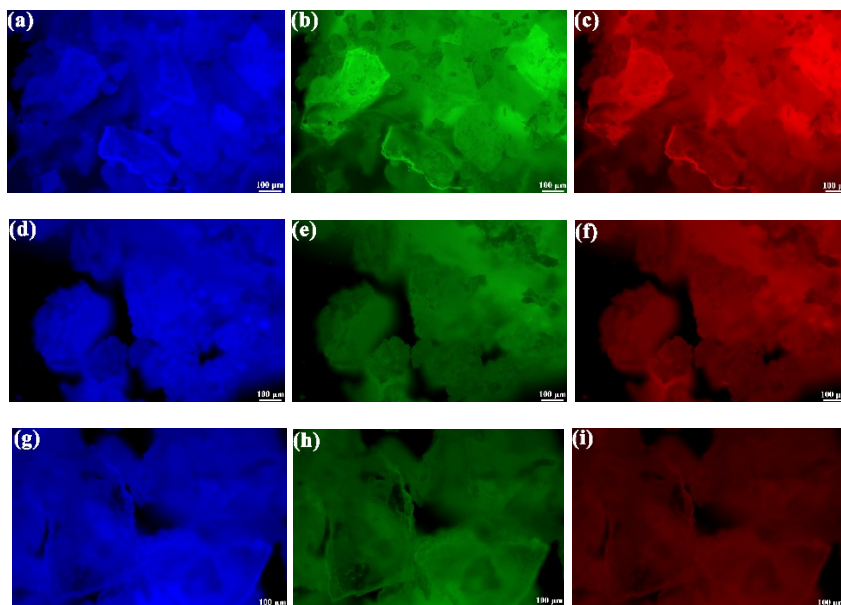
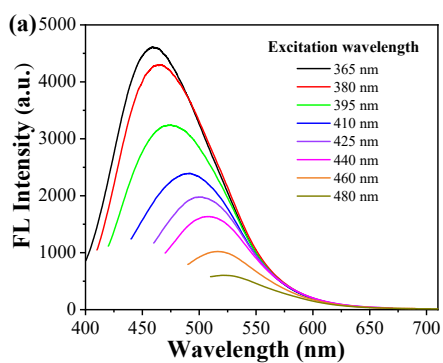


Figure S7. Microscope images of luminescent complexes (a-c) 16-2-16·2Trp, (d-f) 16-2-16·2Phe, and (g-i) 16-2-16·2Lys taken under illumination of UV (340-380 nm, left), blue (450-490 nm, middle), or green (515-560 nm, right). Scale bar: 100 μm .



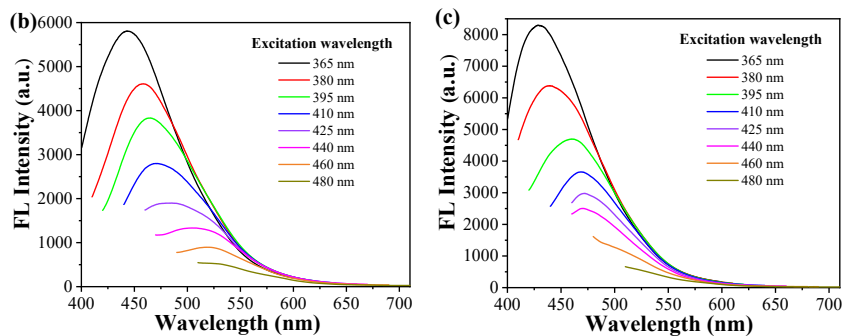


Figure S8. Excitation-dependent emission spectra of luminescent complexes (a) 16-2-16·2Trp, (b) 16-2-16·2Phe, and (c) 16-2-16·2Lys.

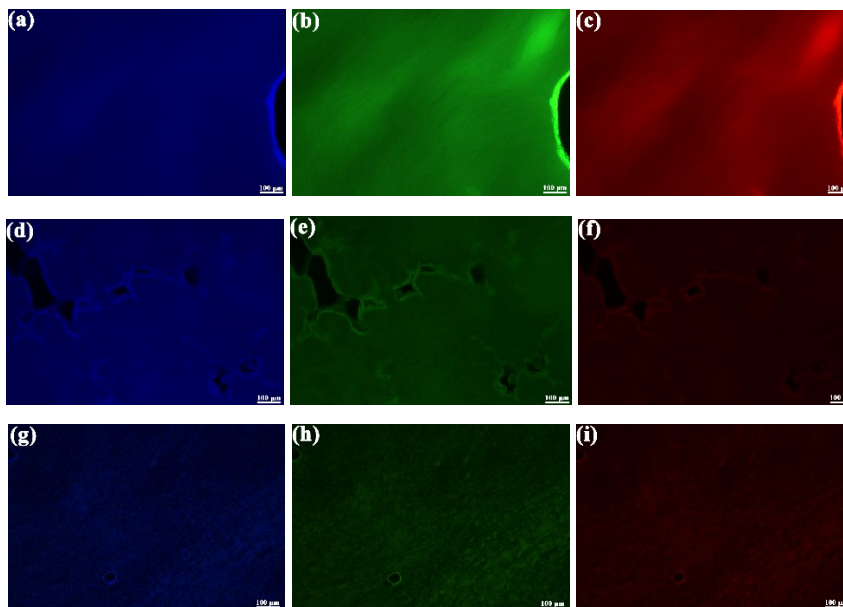
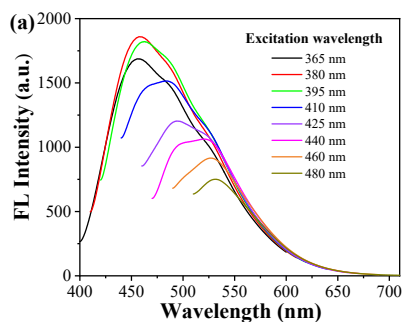


Figure S9. Microscope images of luminescent ILCs (a-c) 16-2-16·2Trp, (d-f) 16-2-16·2Phe, and (g-i) 16-2-16·2Lys taken under illumination of UV (340-380 nm, left), blue (450-490 nm, middle), or green (515-560 nm, right). Scale bar: 100 μm .



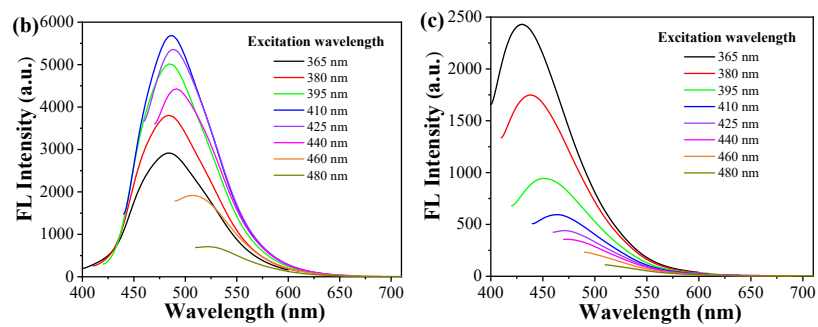


Figure S10. Excitation-dependent emission spectra of ILCs (a) 16-2-16·2Trp, (b) 16-2-16·2Phe, and (c) 16-2-16·2Lys.