Synthesis, Absorption and Fluorescence Spectral Characteristics of Trinucleus Dimethine Cyanine Dyes as Fluorescent Probes for DNA Detection

Jun-Jie Su, Lan-Ying Wang, Xiang-Han Zhang, Yi-Le Fu, Yi Huang and Yong-Sheng Wei

Key Laboratory of Synthetic and Natural Functional Molecule Chemistry (Ministry of Education), College of Chemistry and Materials Science, Northwest University, Xi’an 710069, People’s Republic of China

Department of Chemistry, Xianyang Normal University, Xianyang, Shaanxi 712000, China

For Fluorescence emission of 3a-3f in buffer, in the presence of DNA see Figure S1-S6. For 1H NMR, 13C NMR and IR see Figure S6-S24.
Figure S5. Fluorescence emission of 3e in buffer, in the presence of DNA. 
a: 3e in buffer. b: 3e in the presence of DNA.

Figure S6. Fluorescence emission of 3f in buffer, in the presence of DNA. 
a: 3f in buffer. b: 3f in the presence of DNA.

Trinucleus dimethine cyanine dye 3a

Figure S7. 1H NMR spectrum of 3a.
Figure S8. $^{13}$C NMR spectrum of 3a.

Figure S9. IR spectrum of 3a.
Trinucleus dimethine cyanine dye 3b

Figure S10. $^1$H NMR spectrum of 3b.

Figure S11. $^{13}$C NMR spectrum of 3b.
Figure S12. IR spectrum of 3b.

Trinucleus dimethine cyanine dye 3c

Figure S13. $^1$H NMR spectrum of 3c.
Figure S14. $^{13}$C NMR spectrum of 3c.

Figure S15. IR spectrum of 3c.
Trinucleus dimethine cyanine dye \(3d\)

Figure S16. \(^1\)H NMR spectrum of \(3d\).

Figure S17. \(^{13}\)C NMR spectrum of \(3d\).
Figure S18. IR spectrum of 3d.

Trinucleus dimethine cyanine dye 3e

Figure S19. $^1$H NMR spectrum of 3e.
Figure S20. $^{13}$C NMR spectrum of 3e.

Figure S21. IR spectrum of 3e.
Trinucleus dimethine cyanine dye 3f

Figure S22. $^1$H NMR spectrum of 3f.

Figure S23. $^{13}$C NMR spectrum of 3f.
Figure S24. IR spectrum of 3f.