

Supporting Information for:

Hyperbranched conjugated polymers containing 1,3-butadiene units:
metal-free catalyzed synthesis and selective chemosensor for Fe³⁺ ion

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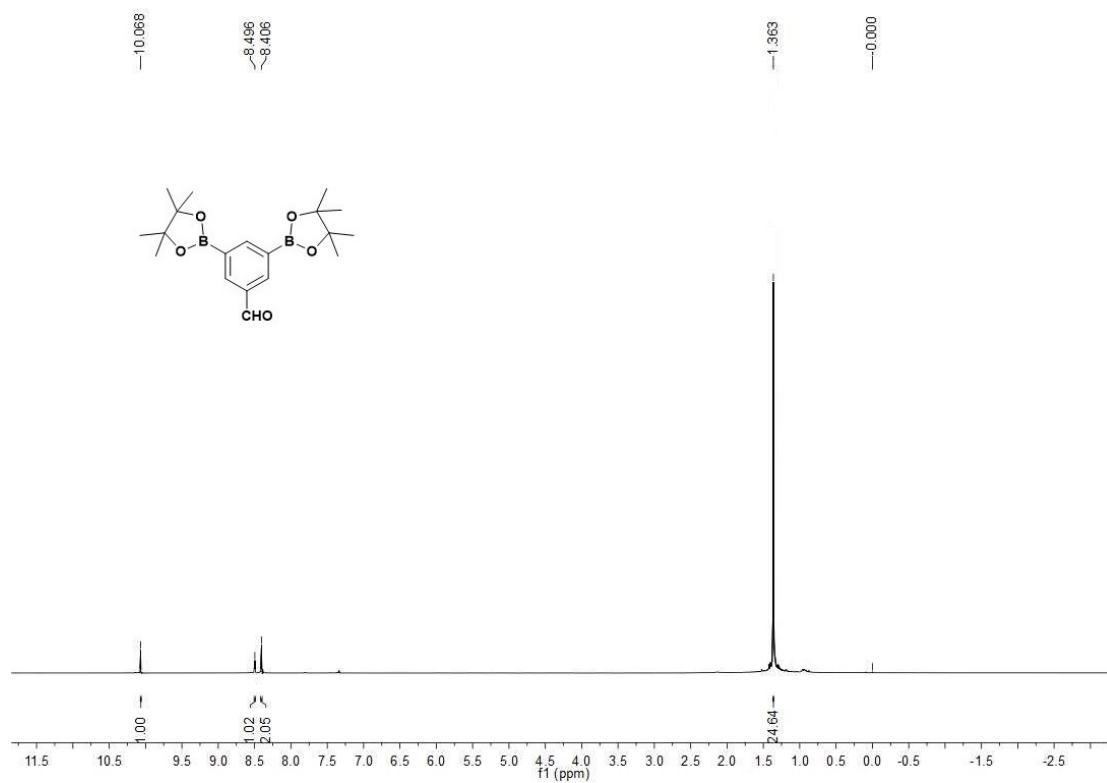


Figure S1. ¹H NMR spectrum of 1 in CDCl₃.

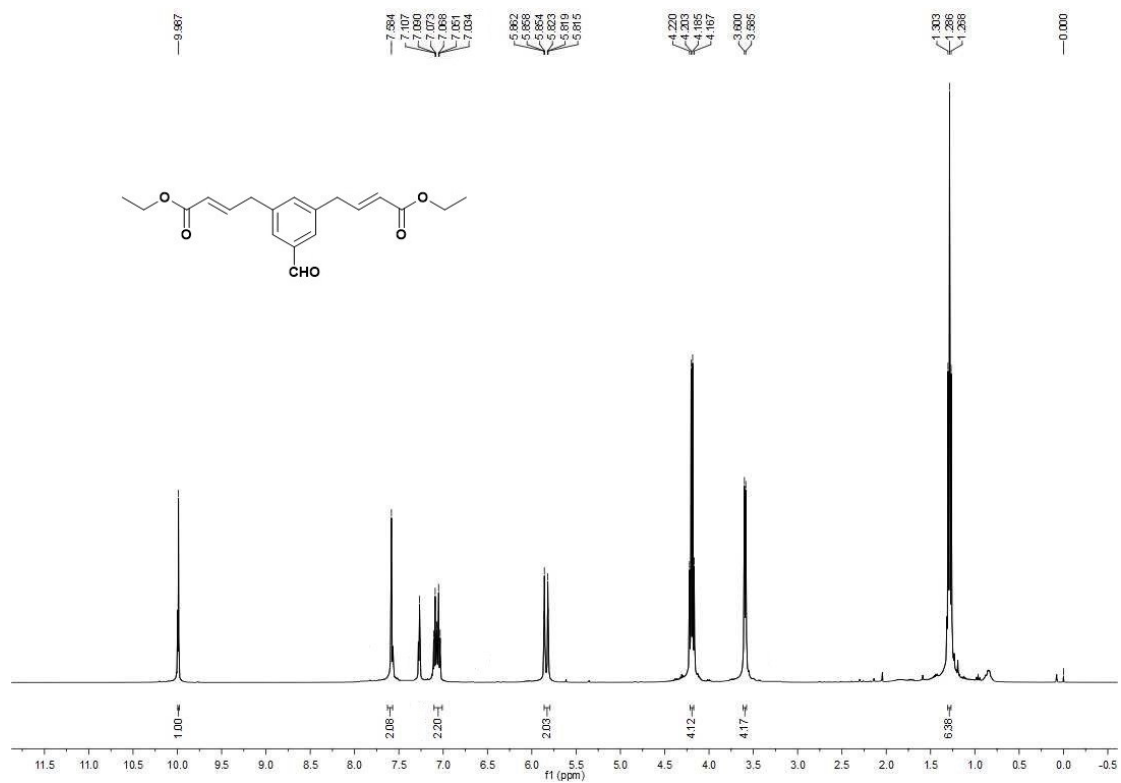


Figure S2. ¹H NMR spectrum of M1 in CDCl₃.

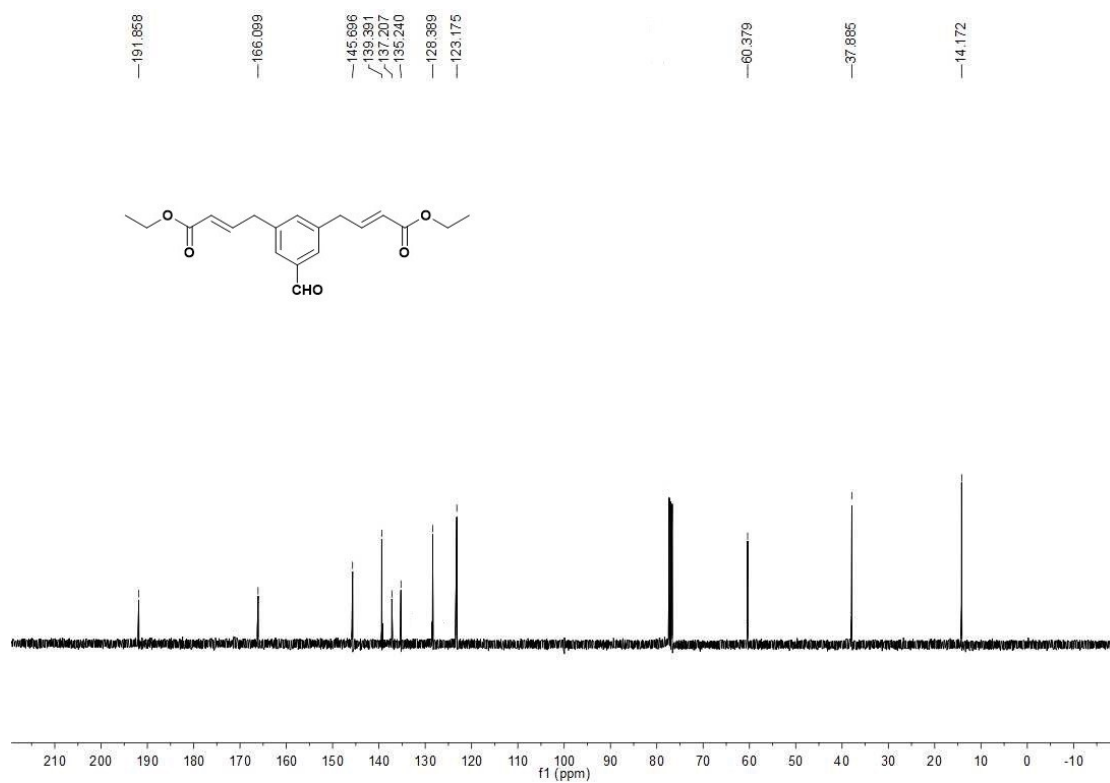


Figure S3. ¹³C NMR spectrum of M1 in CDCl₃.

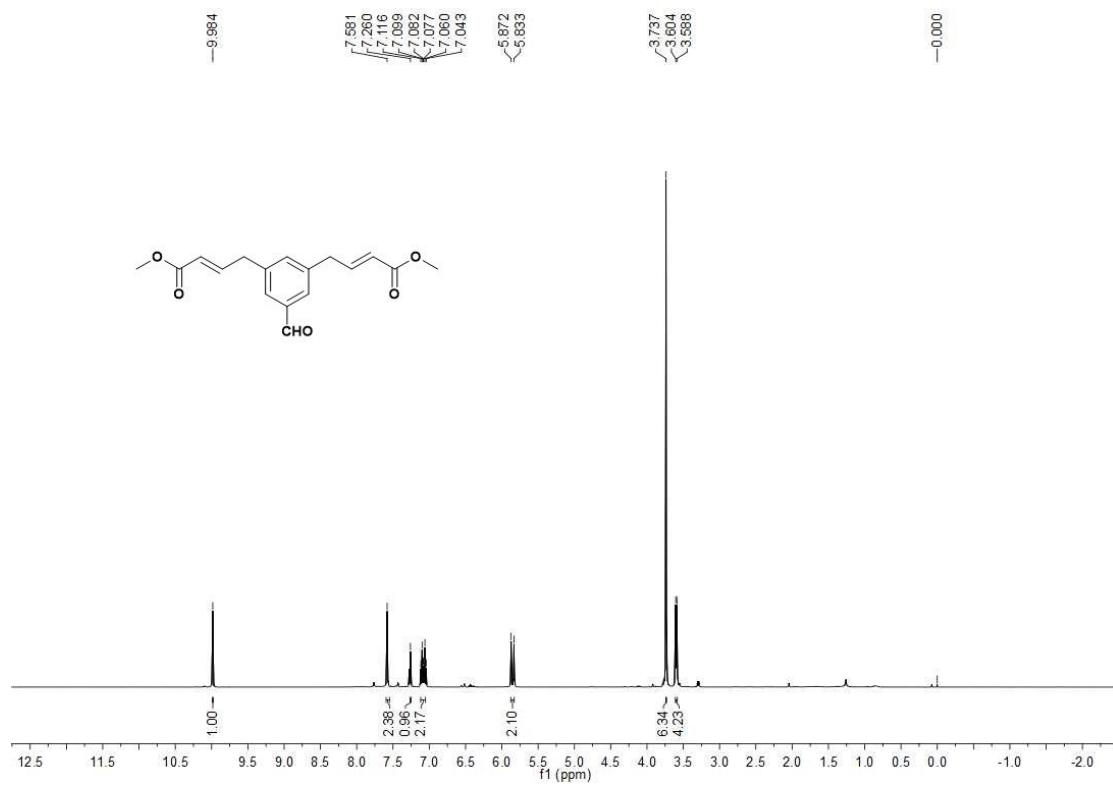


Figure S4. ¹H NMR spectrum of M2 in CDCl₃.

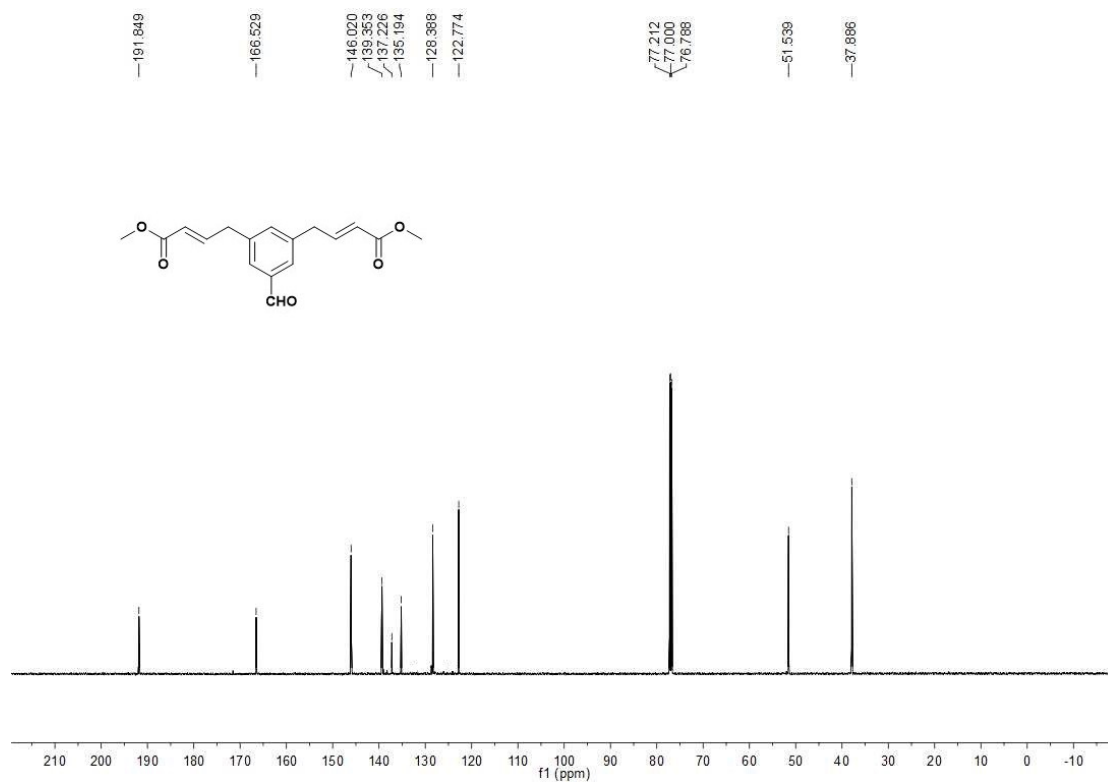


Figure S5. ^{13}C NMR spectrum of M2 in CDCl_3 .

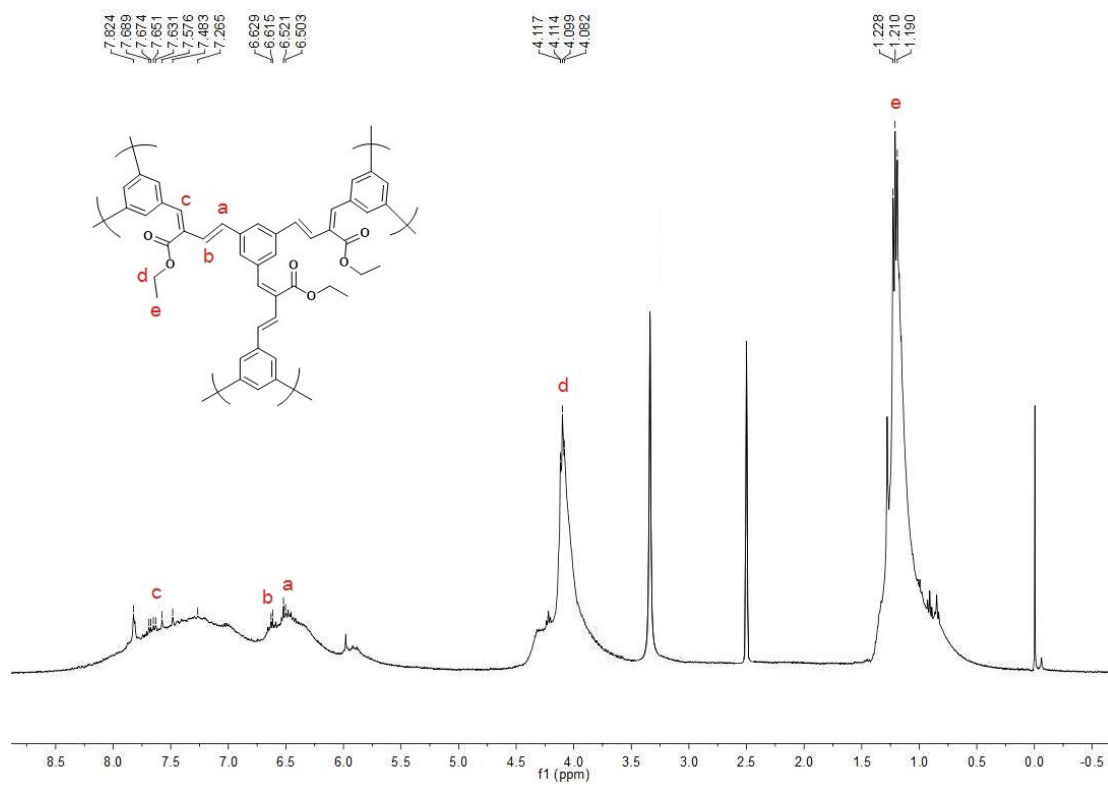


Figure S6. ^1H NMR spectrum of P1 in DMSO- d_6 .

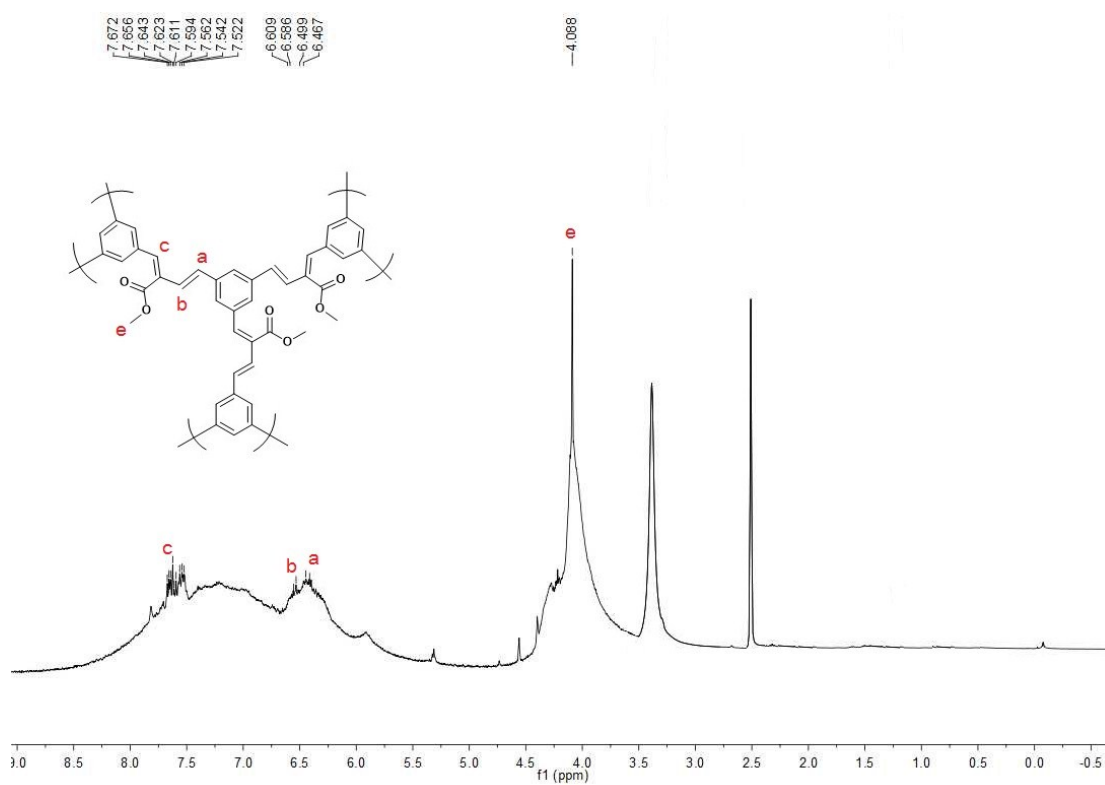


Figure S7. ^1H NMR spectrum of P2 in DMSO- d_6 .

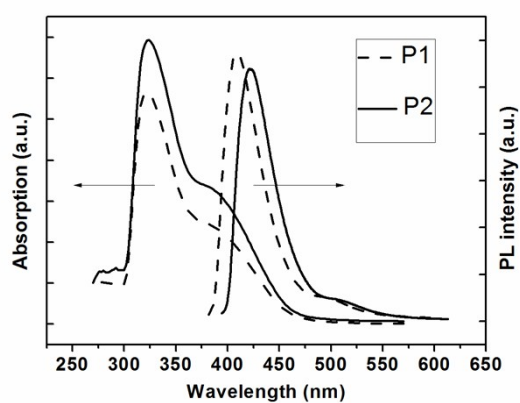


Figure S8. UV-vis absorption spectra and photoluminescence spectra of the polymers in THF

solutions

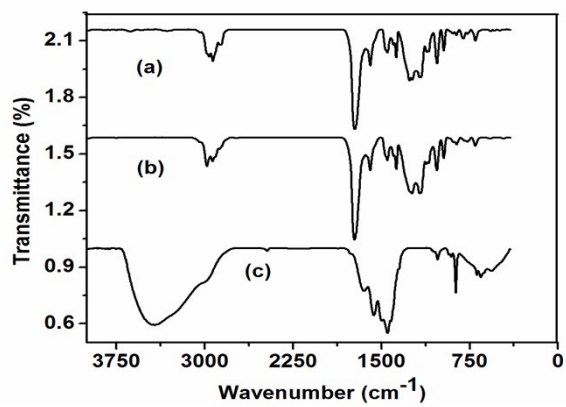


Figure S9. IR spectra of polymers P1 (a), P2 (b) and P3 (c).

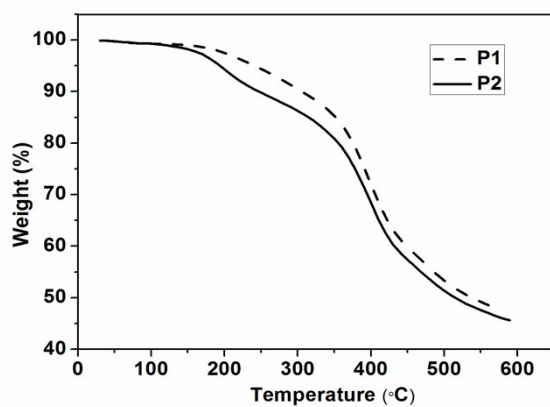


Figure S10. TGA curves of polymers at a scan rate of 20 °C min⁻¹ under nitrogen atmosphere.

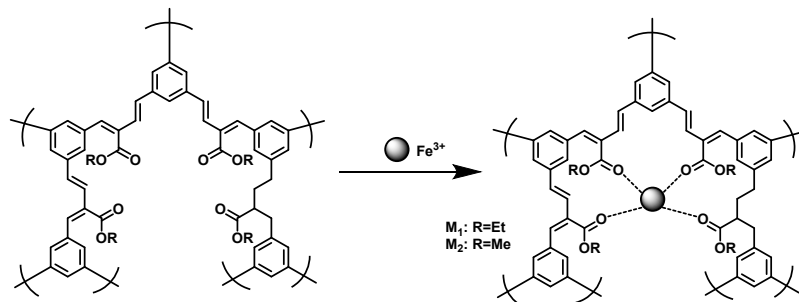


Figure S11. Proposed mechanism of P1 and P2 fluorescence quenching induced by Fe^{3+} .

Figure S12. (a): UV-vis absorption spectra of P2; (b): fluorescence spectra and images of P2.

Figure S13. (a): Fluorescence response of P2 to Fe^{3+} in THF solution; (b): The concentration line chart of P2.

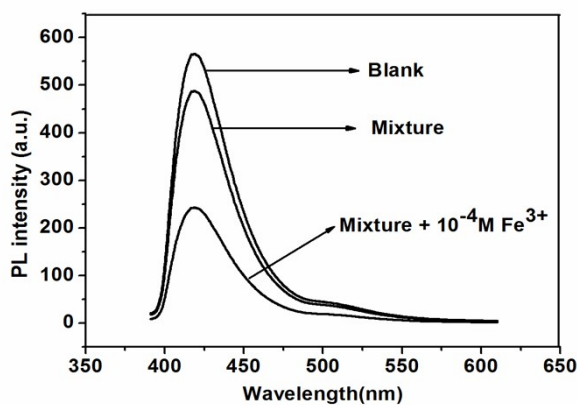


Figure S14. Fluorescence change of P2 upon titration with metal ion mixtures (concentration of each metal ion was 10^{-4} M) with or without Fe^{3+} in THF solution.

Figure S15. (a): Fluorescence response of P3 to Fe^{3+} in 10 mM NaH_2PO_4 - Na_2HPO_4 buffer. (b):

The concentration line chart of P3.