A new fluorescent probe for Al^{3+} ion sensing in solution phase and CH_3COO^- in solid state with aggregation induced emission (AIE) activity

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Supporting Information

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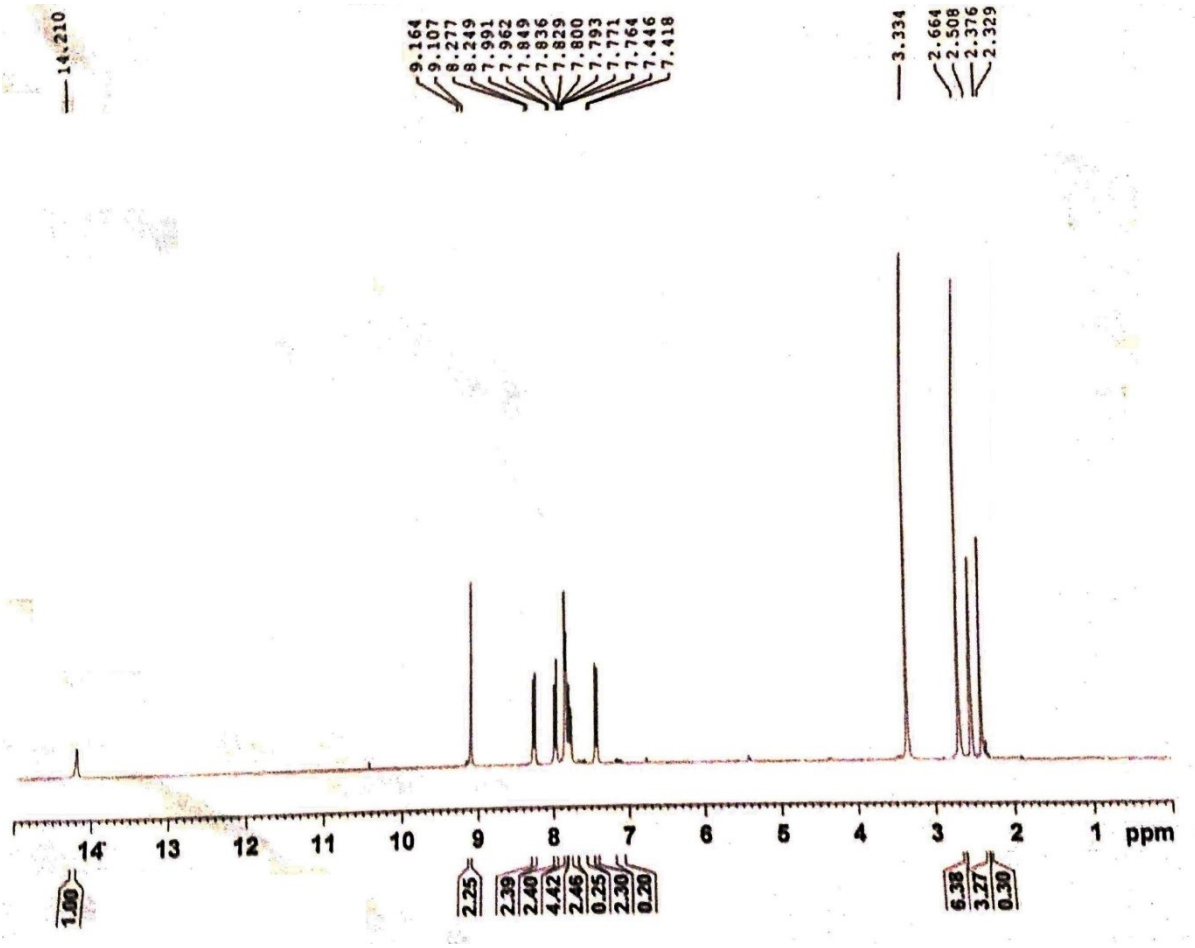

Figure S1. ^{1}H NMR of **DFP-AMQ** in DMSO-d_6.

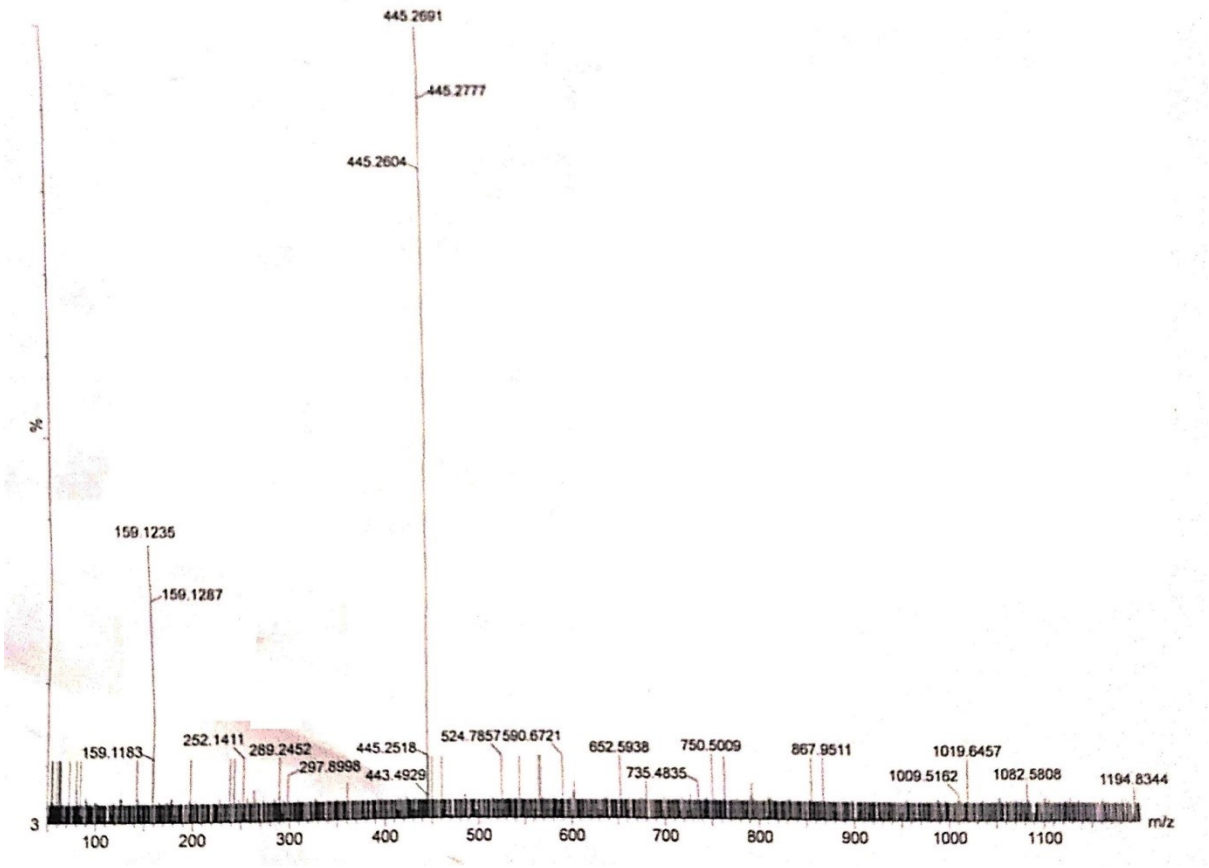

Figure S2. Mass spectra of **DFP-AMQ**.

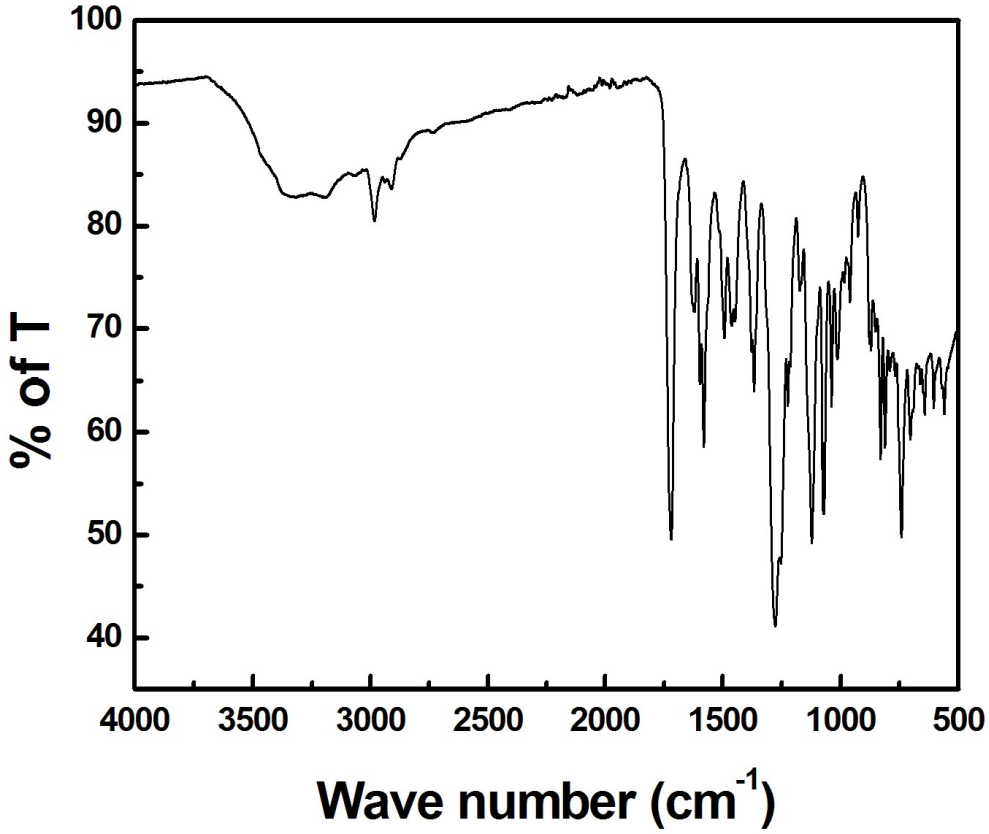

Figure S3. FTIR spectra of **DFP-AMQ**.

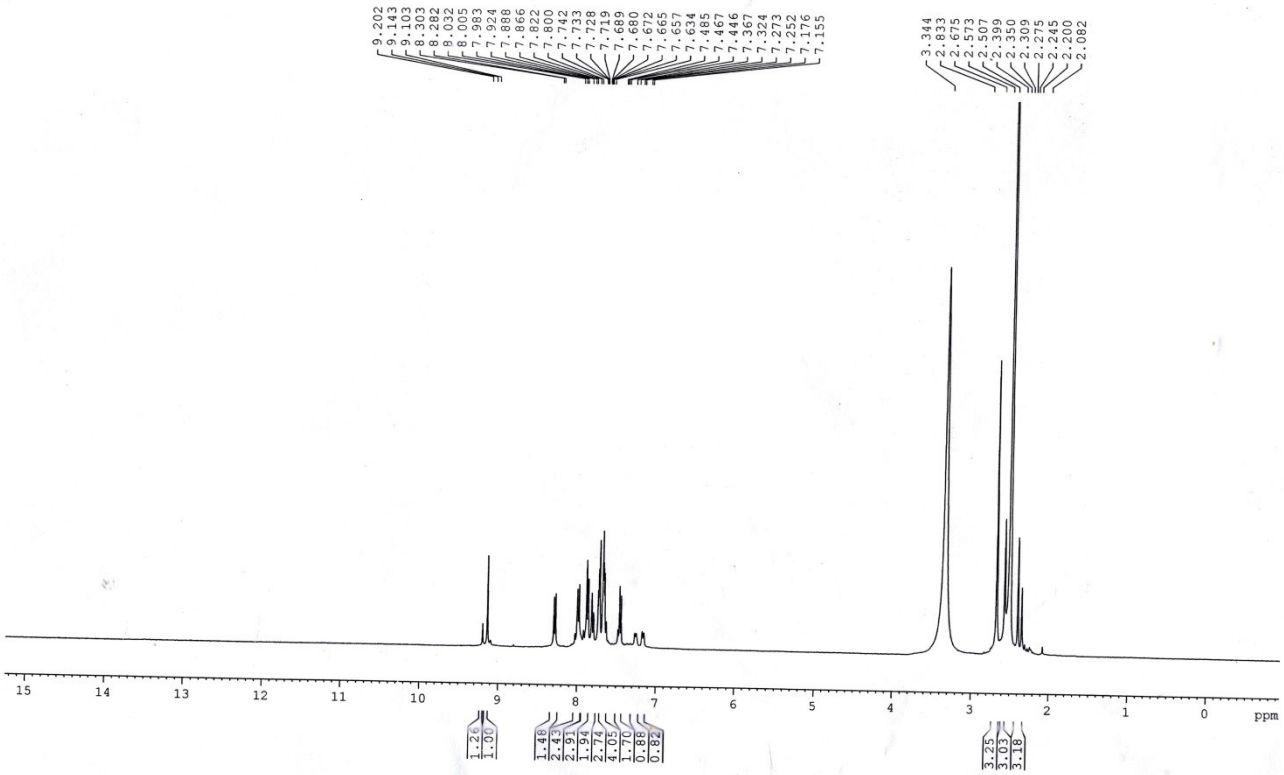

Figure S4. ^{1}H NMR of **[DFP-AMQ-Al]**$^{+}$in DMSO-d_6.

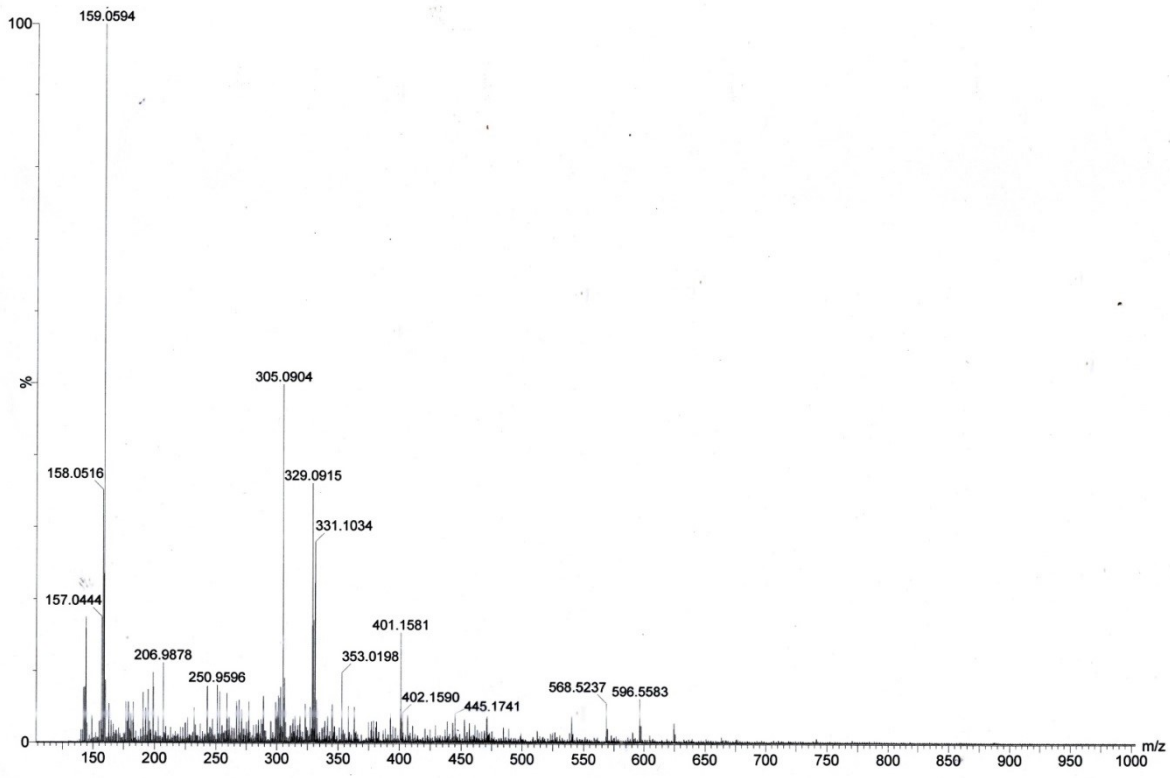

Figure S5. Mass spectra of **[DFP-AMQ-Al]**$^{+}$.

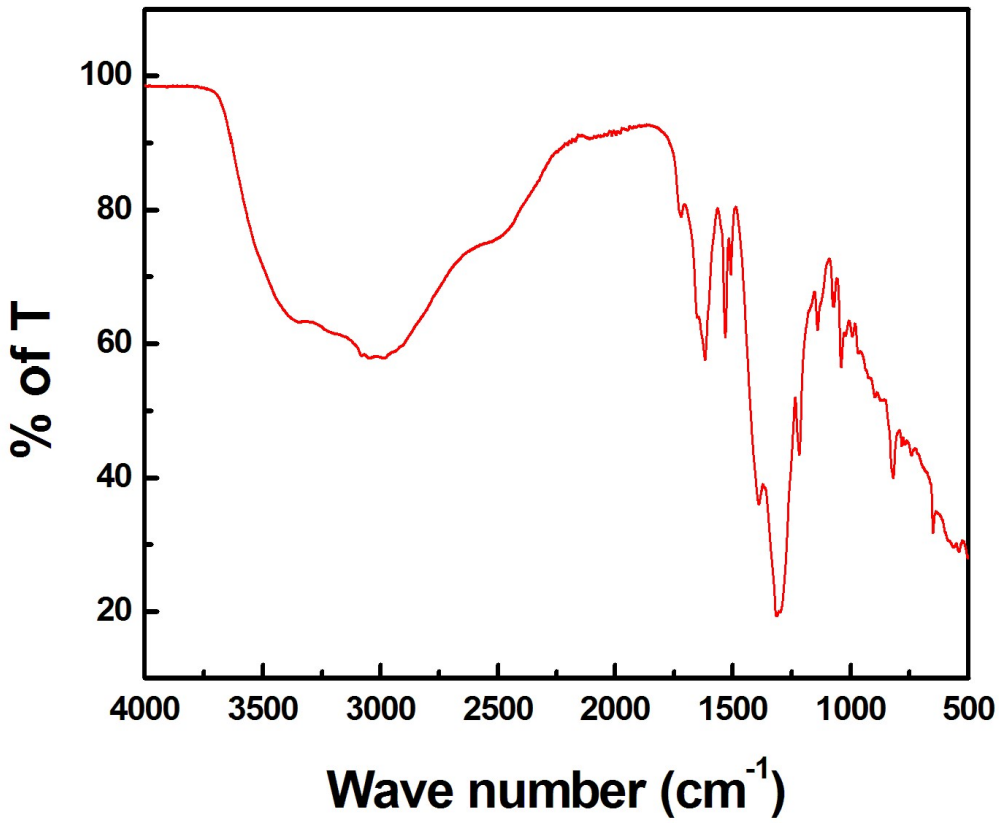

Figure S6. FTIR spectra of **[DFP-AMQ-Al]**$^{+}$.

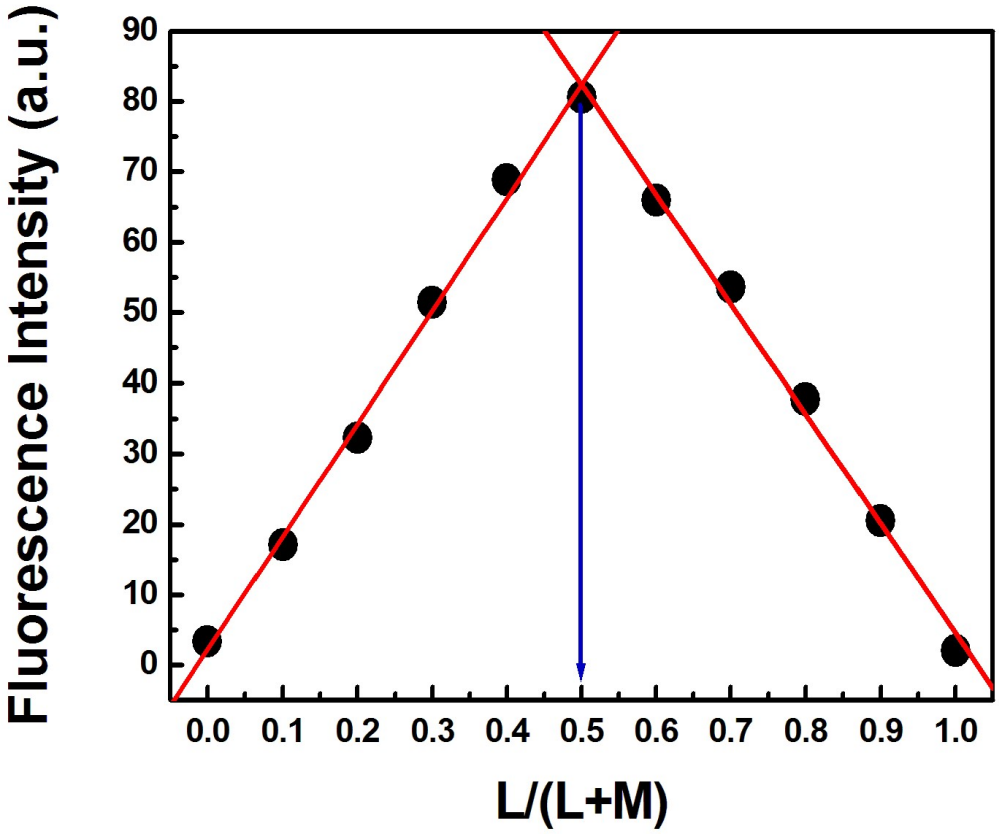

Figure S7. Job's plot for the determination of the composition of the**DFP-AMQ**–Al^{3+} complex.

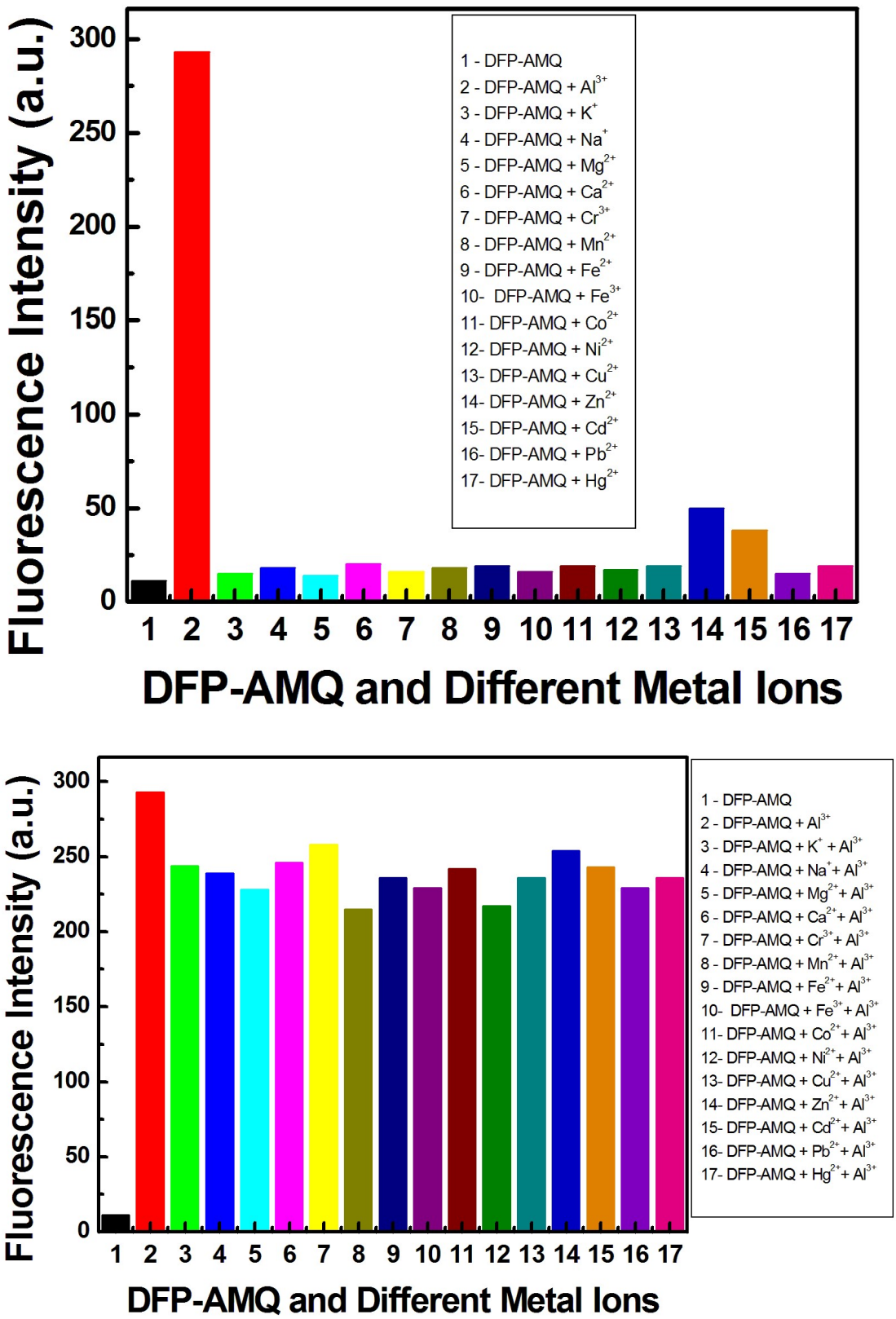

Figure S8. Fluorescence emission of DFP-AMQ (20 μM) induced by different cations (100 μM)

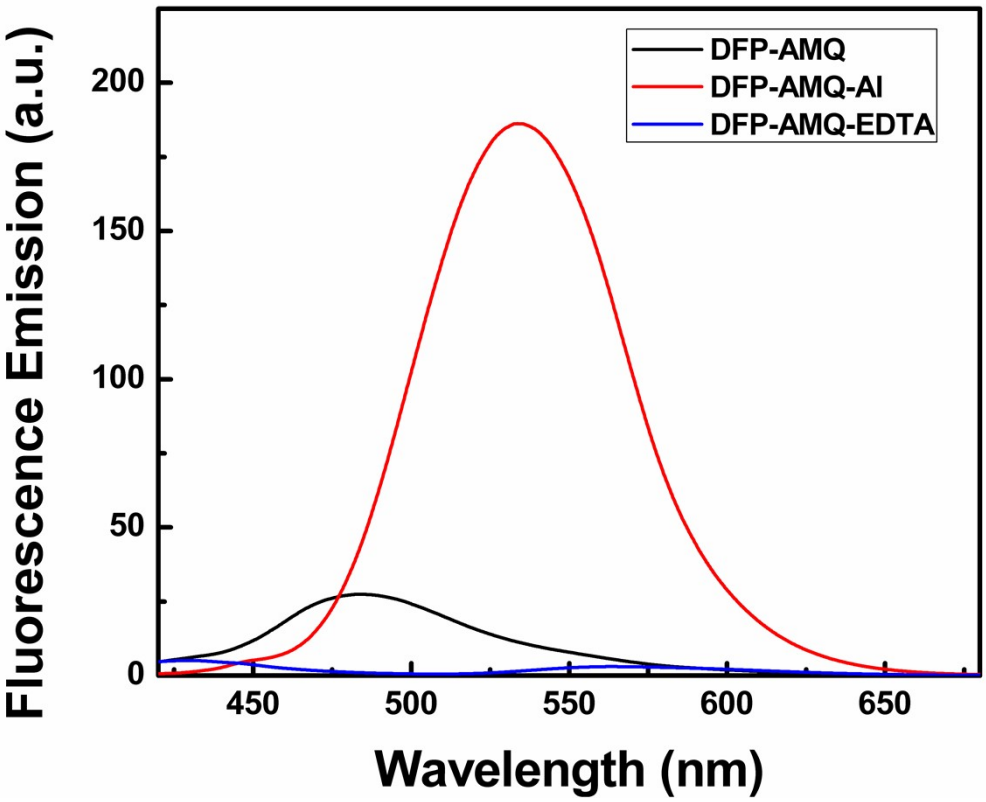

Figure S9. Reversibility study by EDTA.

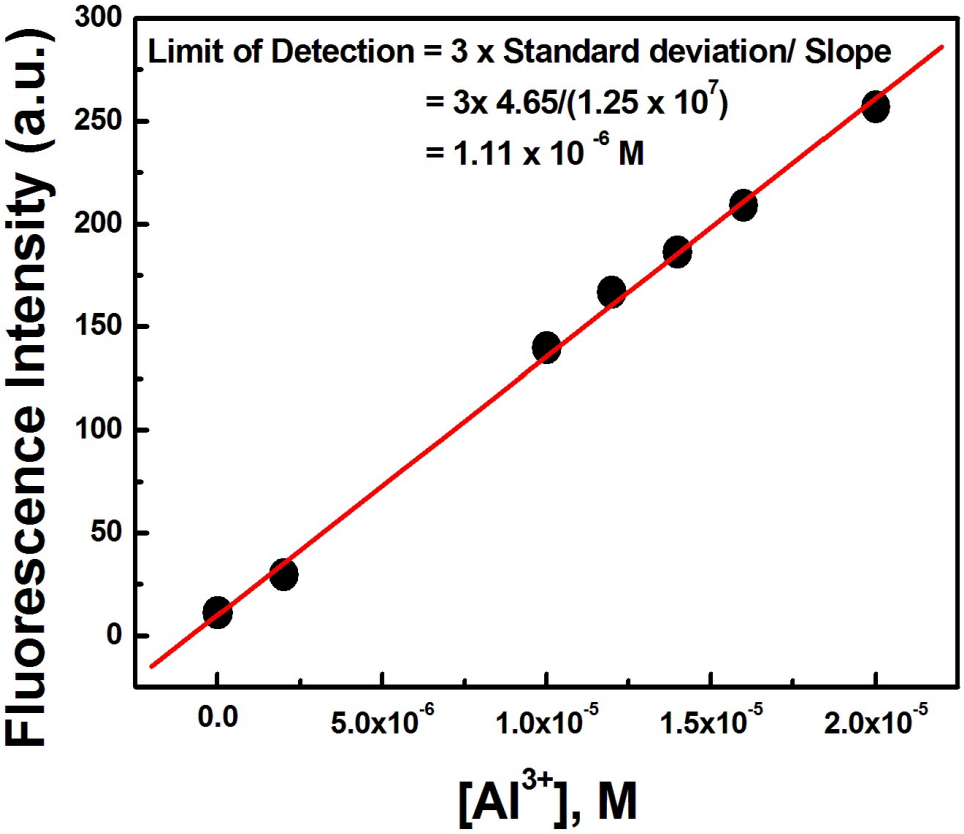

Figure S10. Limit of detection of Al^{3+}.

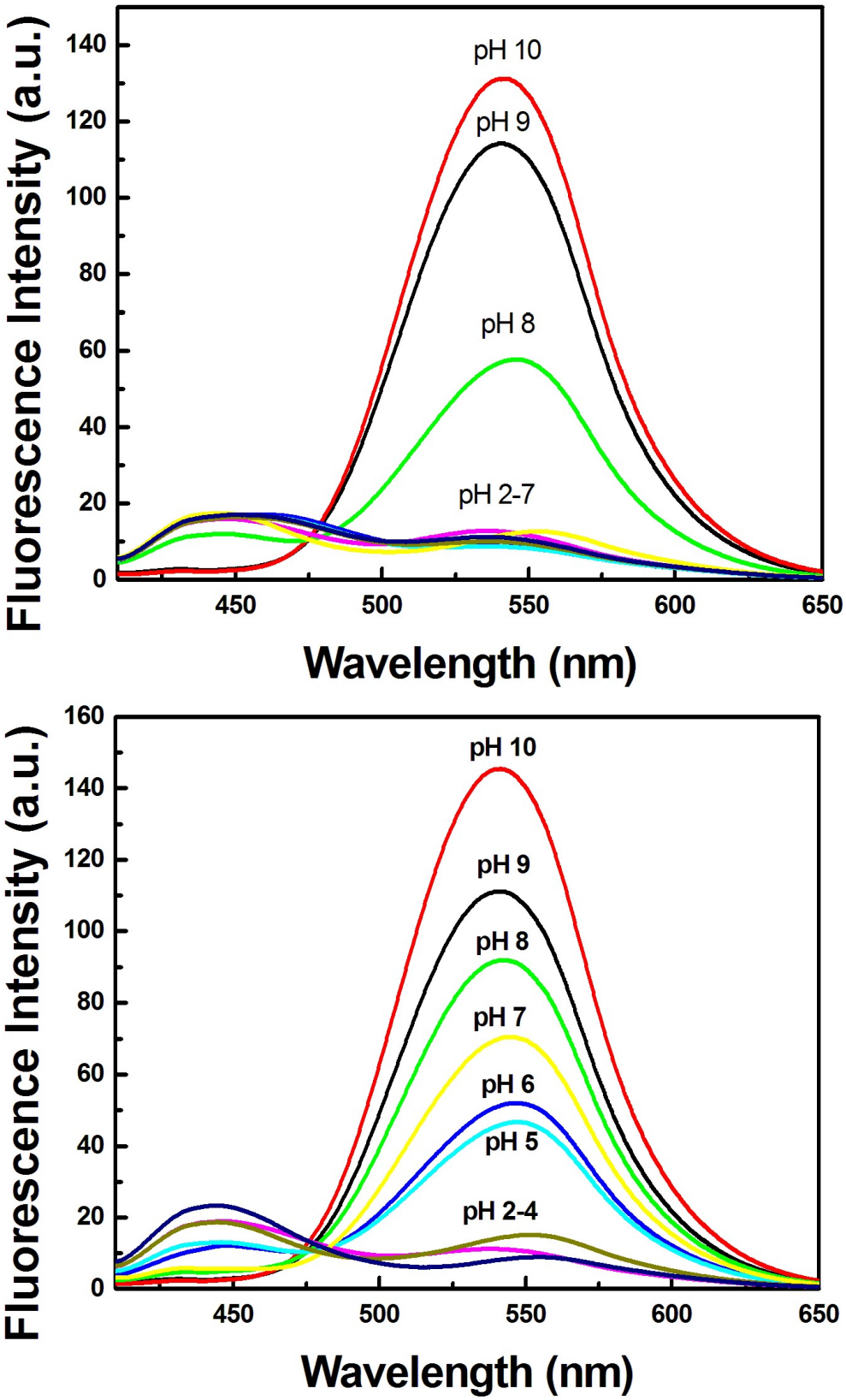

Figure S11. pH dependence of the FIs of the free ligand **DFP-AMQ**(above) and the **DFP-AMQ**–Al^{3+} complex (below).

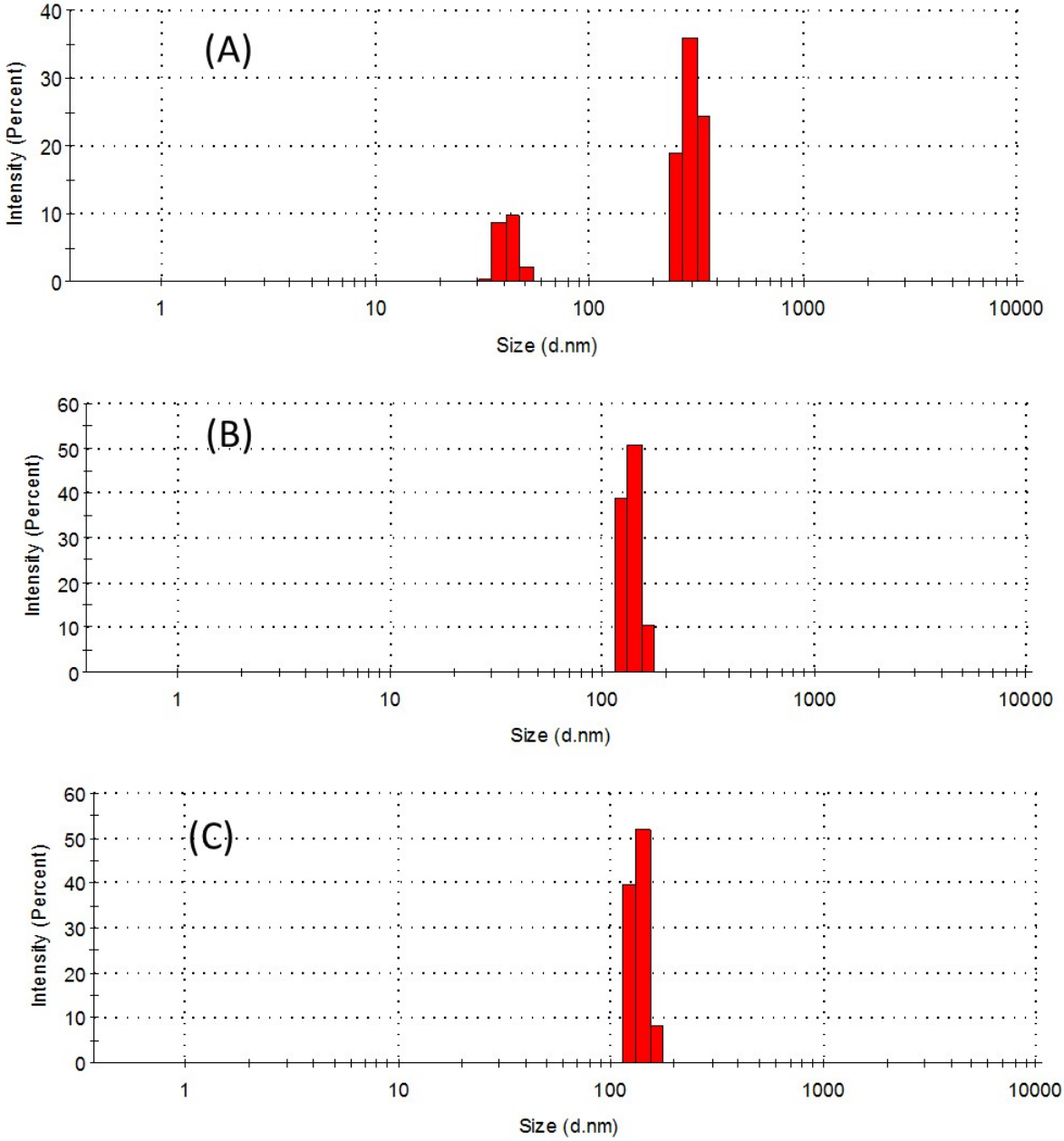

Figure S12. Dynamic light scattering (DLS) study of **DFP-AMQ-Al^{3+}** with different percentages of H_2O: (A) 0% , (B) 20% and (C) 50% and shows the average size (A) 204.04 nm, 297.41 nm and 315.27 nm.

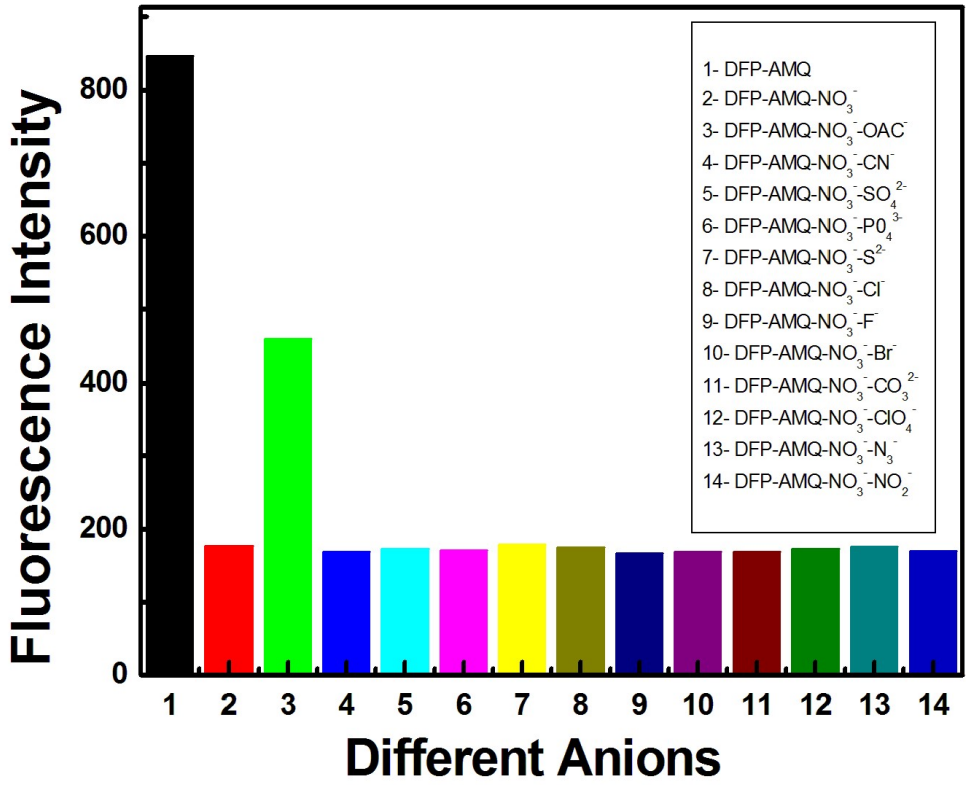

Figure S13. Fluorescence emission of **DFP-AMQ** with NO_3^- and both NO_3^- with other anions in solid state (at λ_{ex} = 450 nm).

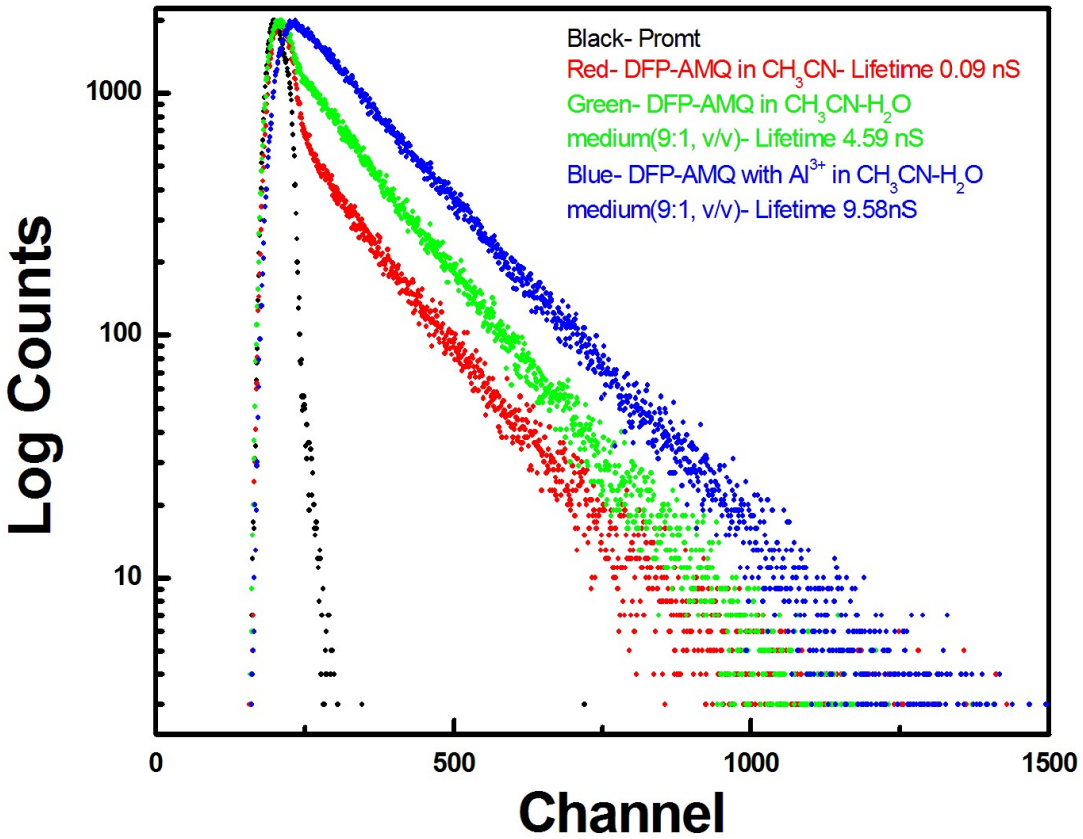

Figure S14. Lifetime measurement of the probe DFP-AMQ in CH_3CN and in CH_3CN-H_2O (9:1,v/v) medium and DFP-AMQ-Al^{3+} in CH_3CN-H_2O (9:1,v/v) medium.