Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry.

Supplementary material

A cationic AIEgen and hexametaphosphate based simple and convenient fluorometric assay for alkaline phosphatase and its inhibitor

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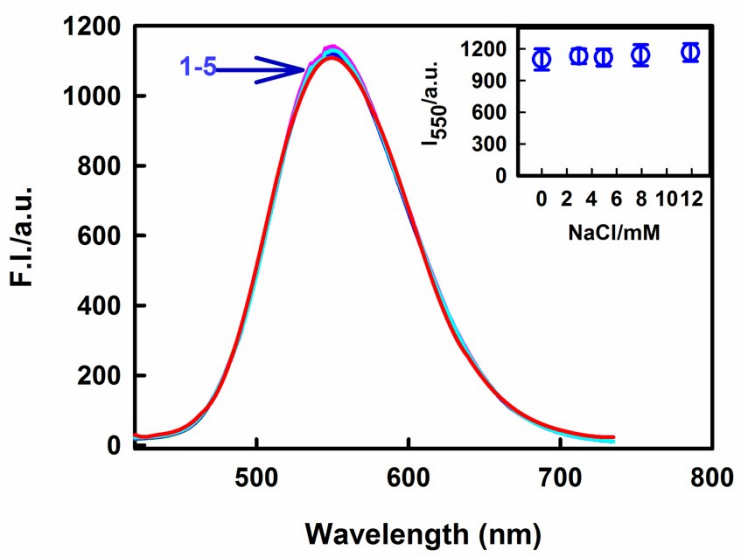

Figure S1. Steady-state fluorescence spectra displaying the changes in emission of TPy-TPE ([TPy-TPE] ~ 2 μM, λ_{ex} = 350 nm) in the presence of NaCl solutions of different concentrations [mM] (1) 0 (2) 3.0 (3) 5.0 (4) 8.0 (5) 12.0 where, red solid line denotes free TPy-TPE in solution. Inset: Variation in emission intensity at 550 nm at different NaCl concentrations. The blue circles correspond to the data points and the error bar shows the standard deviation (n=3).

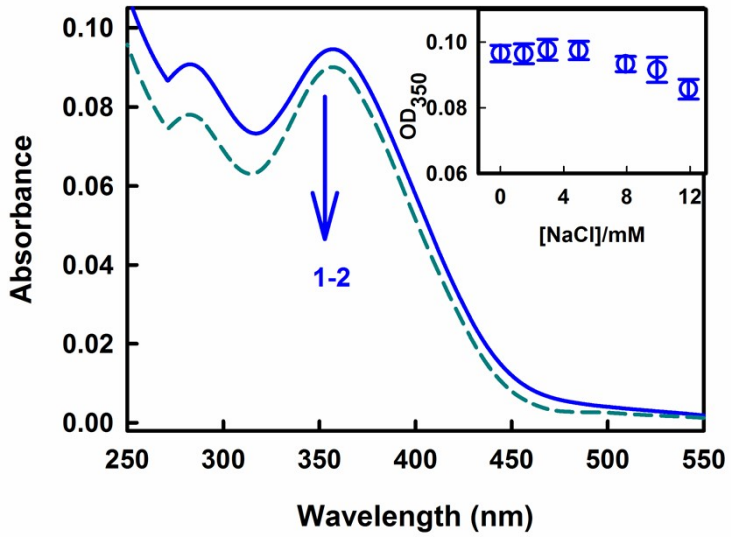

Figure S2. Ground-state absorption spectra displaying the changes in absorbance of TPy-TPE-HMP ([TPy-TPE] ~ 2 μM, [HMP] ~ 26 μM) in the absence and presence of [NaCl] /12

mM. Inset: Changes in absorbance at 350 nm versus NaCl concentration. The error bar represents the standard deviation value calculated from three successive measurements.

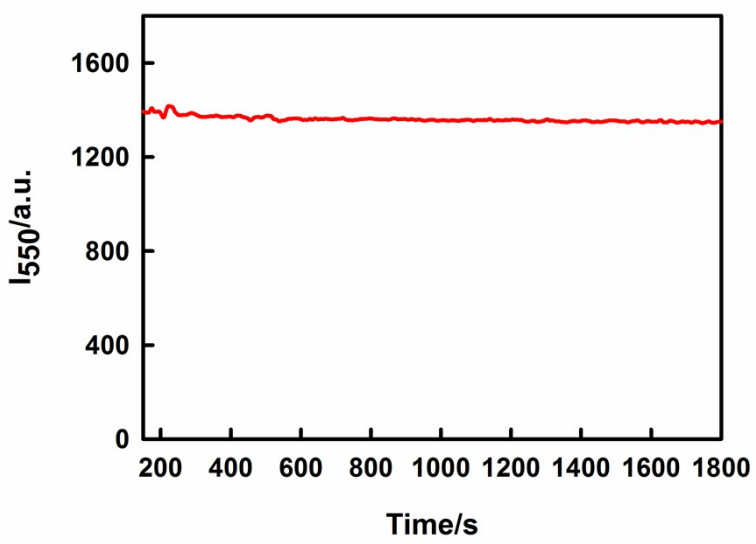

Figure S3. Change in fluorescence intensity of TPy-TPE-HMP complex at 30 °C as a function of incubation time.

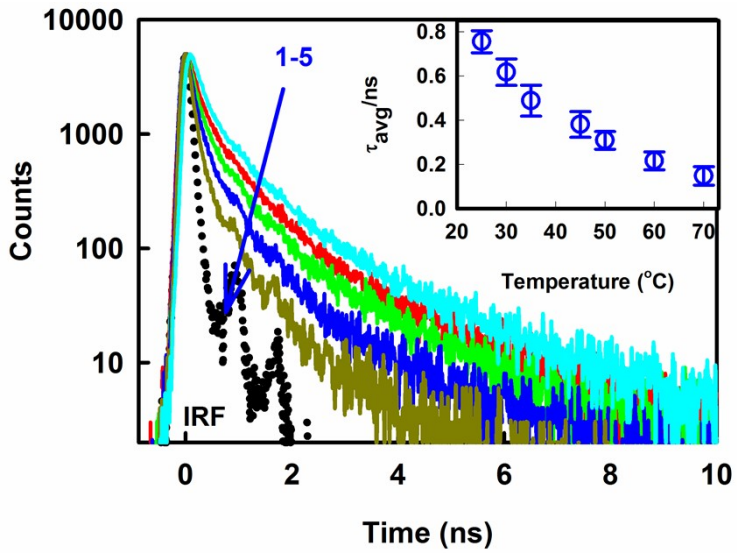

Figure S4. Fluorescence decay profiles for TPy-TPE-HMP complex ([TPy-TPE] = ~ 2 μM, [HMP] = ~12 μM, λ_{ex} = 374 nm, λ_{em} = 550 nm) in aqueous medium at different temperatures (°C) (1) 25 (2) 30 (3) 35 (4) 50 (5) 70 where, the black colour dotted line denotes the instrument response function (IRF). Inset: Variation in average excited state lifetime (τ_{avg}) of

TPy-TPE-HMP versus temperature. The error bar represents the standard deviation value calculated from three successive measurements.

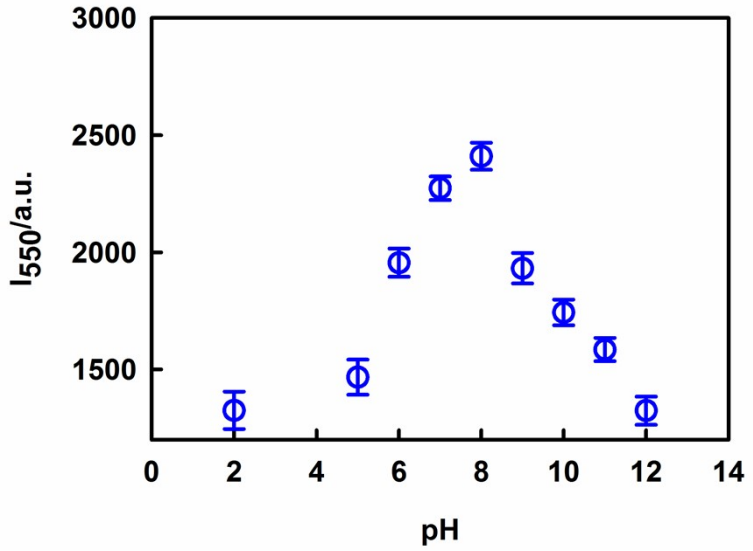

Figure S5. The change in emission intensities at 550 nm for TPy-TPE-HMP complex ([TPy-TPE] ~ 2 μM, [HMP] ~26 μM) at different solution pH values. The error bar represents the standard deviation value calculated from three successive measurements.

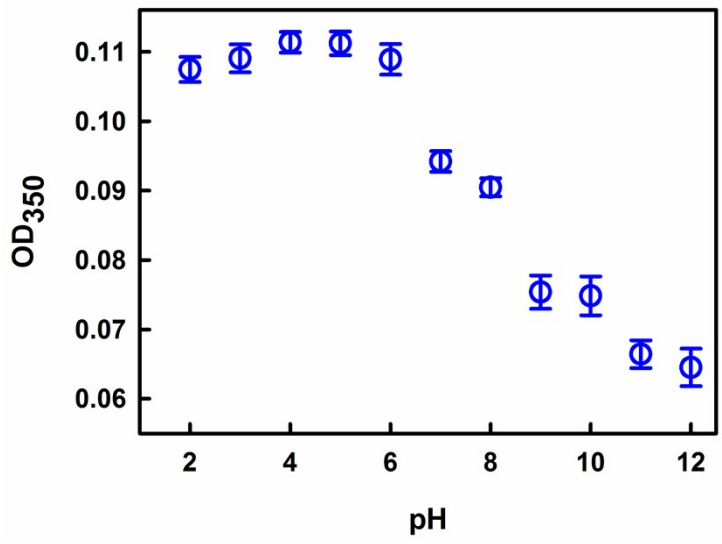

Figure S6. The change in absorbance at 350 nm for TPy-TPE-HMP complex ([TPy-TPE] ~ 2 μM, [HMP] ~26 μM) at different solution pH values. The error bar represents the standard deviation value calculated from three successive measurements.

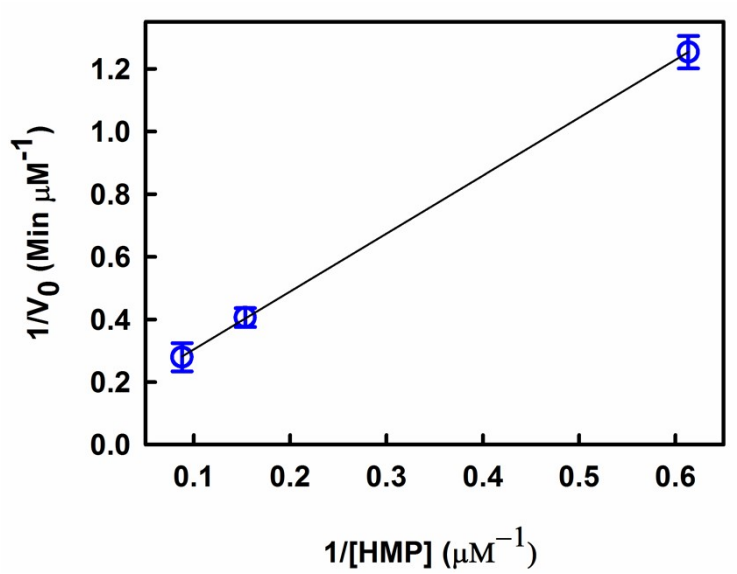

Figure S7. Lineweaver-Burk plot for the digestion of HMP by ALP [990 mU/mL] (λ_{ex} = 350 nm, λ_{em} = 550 nm) in 10 mM Tris-HCl, pH 8.2 at 30^{O}C at different concentrations of HMP (μM) (1) 1.6 (2) 6.5 (3) 11.0**.** The error bar represents the standard deviation value calculated from three successive measurements.

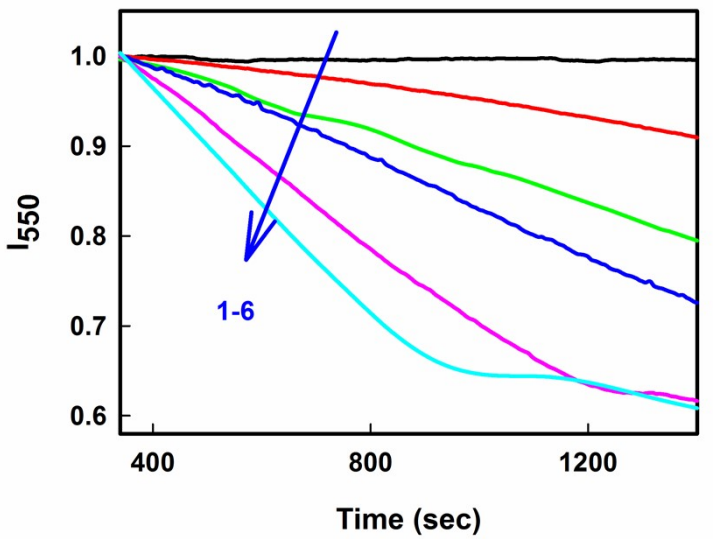

Figure S8. Selectivity of ALP measured as normalised fluorescence decay of the TPy TPy-TPE-HMP complex in 1% human serum prepared in 10 mM Tris-HCl, pH 8.2 at 30^{o}C in the presence of various concentrations of ALP (mU/ml) (1) 0 (2) 495 (3) 865 (4) 1237 (5) 1484 (6) 1855.