Supporting Information
For
A napthelene-pyrazol conjugate: Al(III) ion selective blue shifting chemosensor applicable as biomarker in aqueous solution
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14. Table S1 Life time details of HL

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16. **Fig. S15** $^1$H NMR titration of HL

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19. **Fig. S18** Crystal Packing of HL

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**Fig. S1** $^1$H NMR spectrum of HL in DMSO-d$_6$
Fig. S2 Mass spectrum of HL

Fig. S3 IR spectrum of HL
Fig. S4 $^1$H NMR spectrum of Al(III) complex of HL in DMSO-d$_6$

Fig. S5 IR spectrum of L-Al complex
**Fig. S6** Mass spectrum of L-Al complex

**Fig. S7** Theoretically optimised structure of HL (left) and the L-Al complex (right)
**Fig. S8** Energy level diagram for the frontier p-MOs of HL (left) and L-Al complex (right).

**Fig. S9** Fluorescence (left) and naked eye (right) colour change of the probe in absence and presence of Al(III) ions.
**Fig. S10** Absorption and emission spectra of 10 µM of the probe in 100 mM HEPES buffer (DMSO/water 1:5, v/v) at 27°C

**Fig. S11** Fluorescence intensity of HL in presence of different cations
Fig. S12  Change of relative fluorescence intensity profile of HL in presence of different cations

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Table S1  Life time details of HL
Fig. S13 Time-resolved fluorescence decay of HL (10 mM) in the absence and presence of added Al(III) ions (5 mM and 10 mM) (at $\lambda_{ex} = 405$ nm) in 100 mM HEPES buffer (DMSO/ water: 1/5, v/v) [$\lambda_{em}$: 450 nm].
**Fig. S14** $^1$HNMR titration of HL (Expansion of aromatic region) in DMSO-d$_6$ (a) $<$10 µM (b) 10 µM (c) 0 µM Al(III)
Fig. S15 $^1$HNMR titration of HL in DMSO-d$_6$ (a) <10 µM (b) 10 µM (c) 0 µM Al(III) ions

Fig. S16 Fluorescence response to pH of HL (10 µM) in absence and in presence of Al(III) (one equivalent) at different pH in 100 mM HEPES buffer (DMSO/ water: 1/5) at 25 °C.
Fig. S17 Cytotoxic effect of HL

Fig. S18 Crystal Packing of HL