

## Supplementary Material

### Synthesis and Evaluation of Thiosemicarbazones Functionalized with Furyl Moieties as New Chemosensors for Anion Recognition

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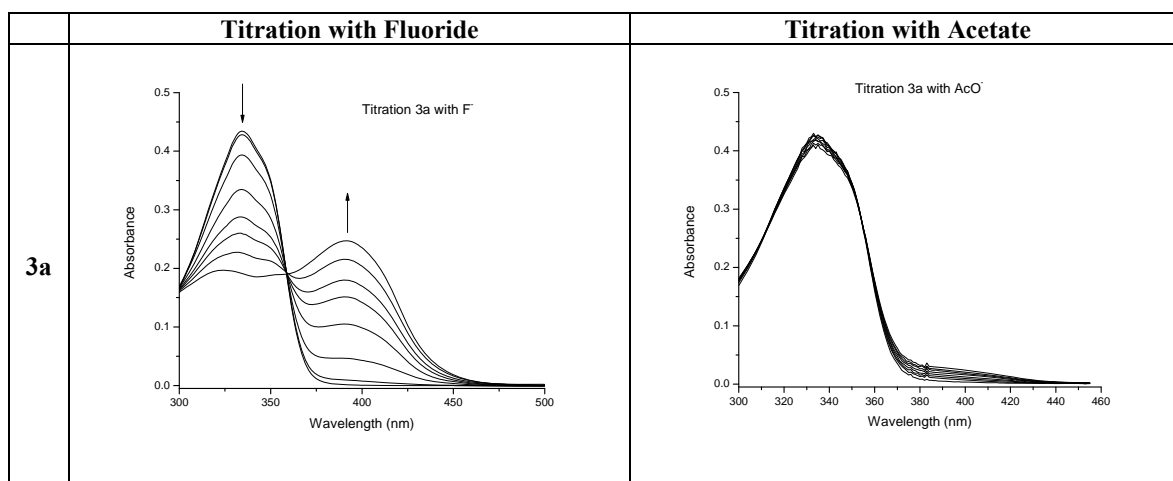
#### I. Characterization data of receptors 3a-f and 4 by <sup>1</sup>H NMR and IR

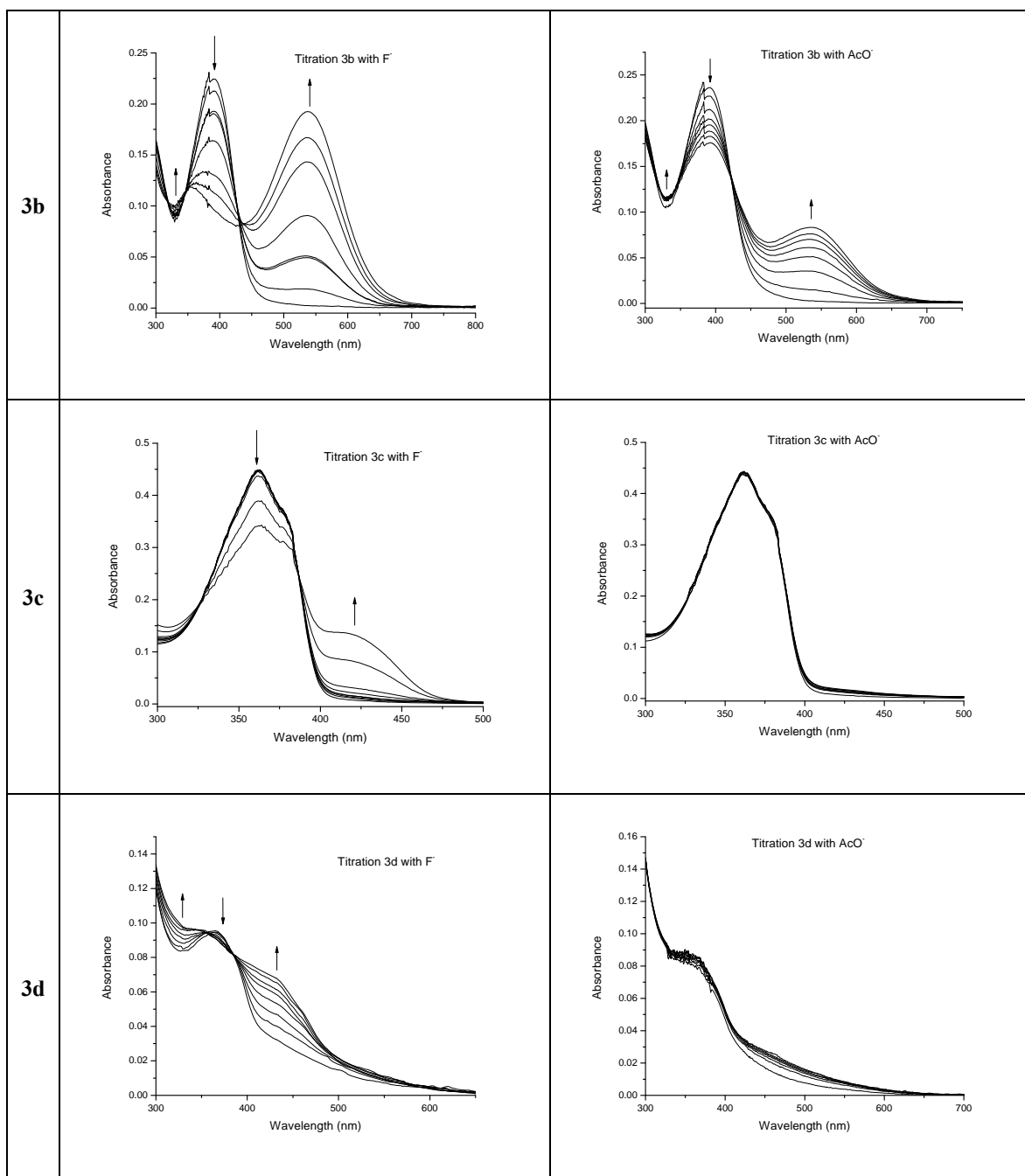
Table 1. Yields, <sup>1</sup>H NMR and IR data of furyl-thiosemicarbazone receptors 3a-f and 4.

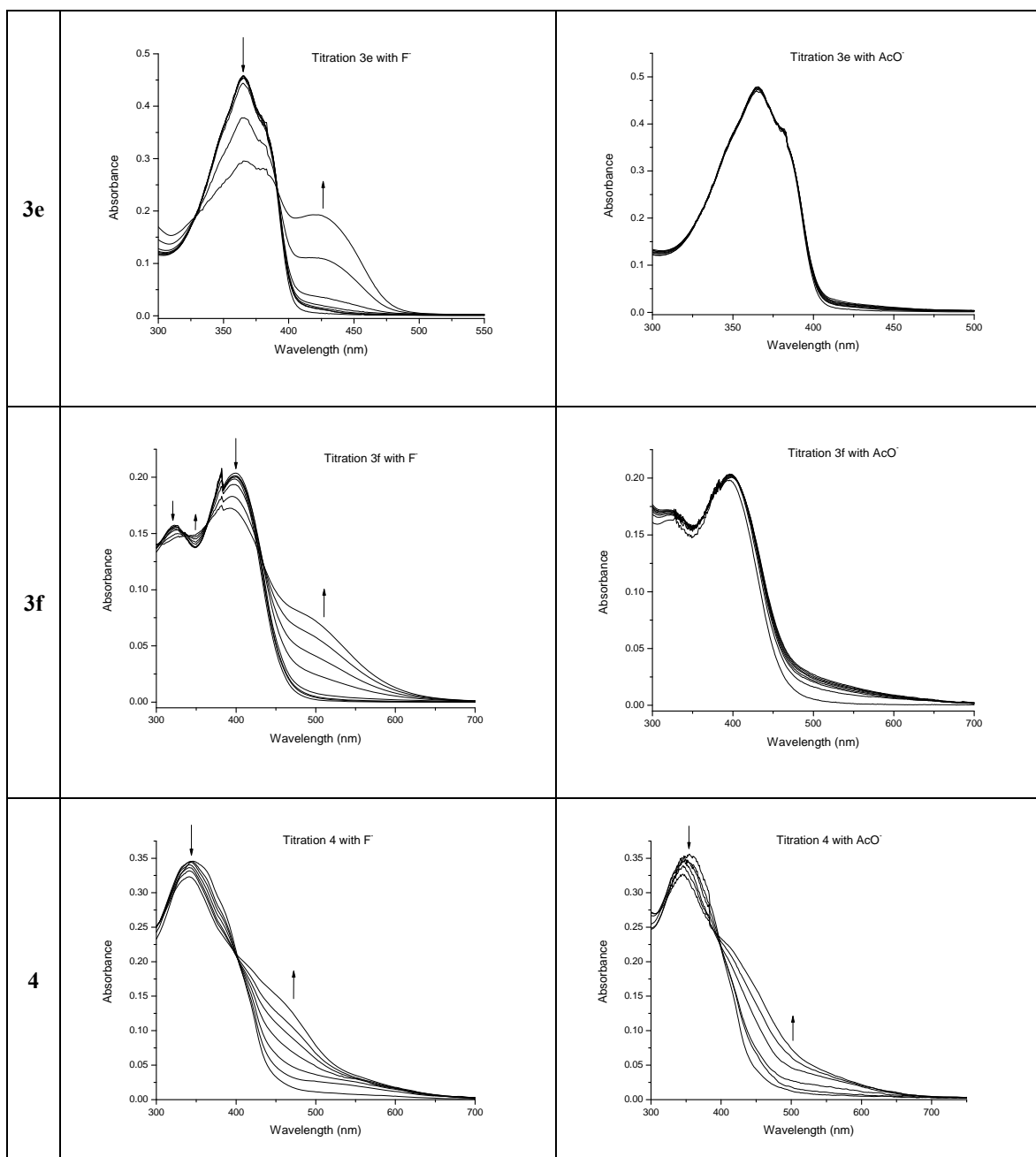
Formyl precursor	Receptor	Yield (%)	$\delta_{\text{H}}$ (ppm) <sup>a</sup>			IR <sup>b</sup> $\nu$ (cm <sup>-1</sup> )	
			(CH=N)	(C=N-NH)	(S=C-NH)	(CH=N)	(NH)
1a	3a	76	7.99	11.85	9.88	3132	3332
1b	3b	81	8.07	12.23	10.18	3135	3313
1c	3c	76	8.09	11.89	9.93	3147	3270
1d	3d	78	8.01	11.84	9.89	3133	3339
1e	3e	87	8.08	11.89	9.92	3143	3287
1f	3f	96	8.11	12.00	9.99	3135	3316
1g	4	90	8.10	11.86	10.15	3158	3322
			8.16	11.91	9.96	-	3300

<sup>a</sup> For the NH proton of the furyl-thiosemicarbazone receptors 3a-f and 4 (300 or 400 MHz, DMSO-*d*<sub>6</sub>). <sup>b</sup> IR recorded in Nujol.

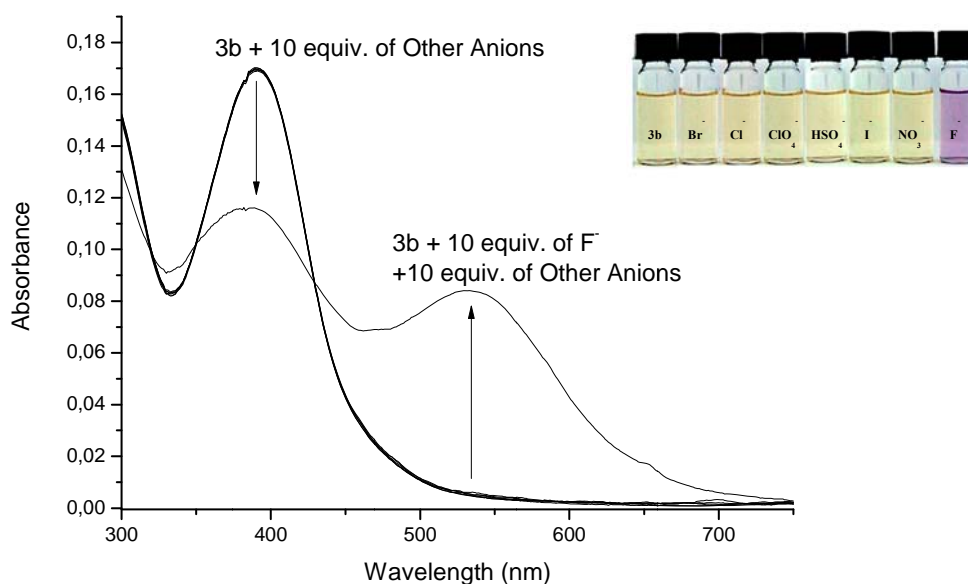
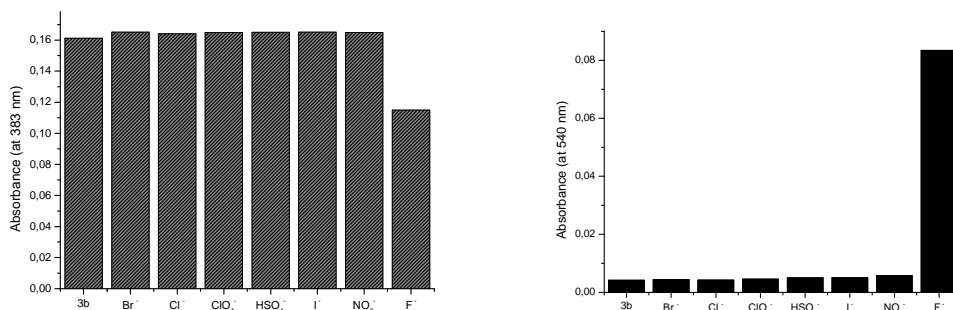
#### II. UV-Vis titration of receptors 3a-f and 4 (1.2x10<sup>-5</sup> mol dm<sup>-3</sup>) with fluoride (left) and acetate (right) anions (0 - 10 equiv.) in acetonitrile.



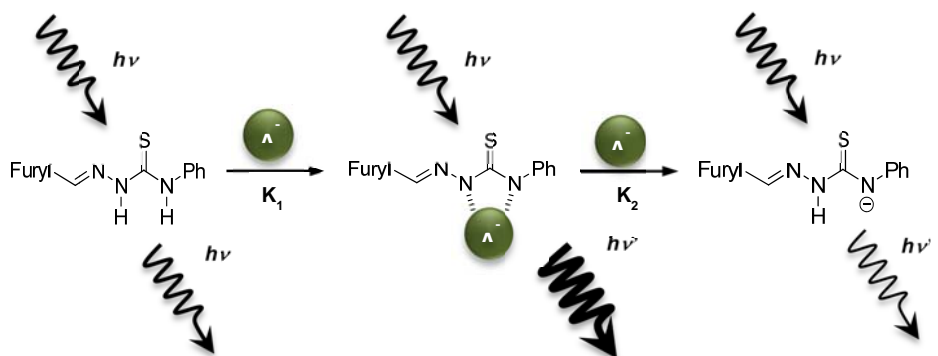




**III. Study of selectivity of 3b ( $1 \times 10^{-5}$  mol dm<sup>-3</sup>) for F<sup>-</sup> (10 equiv.) in presence of 10 equiv. of other anions (Br<sup>-</sup>, Cl<sup>-</sup>, ClO<sub>4</sub><sup>-</sup>, HSO<sub>4</sub><sup>-</sup>, I<sup>-</sup> and NO<sub>3</sub><sup>-</sup>) evaluated.**



**IV. Schematic representation of the dual coordination/deprotonation process for the interaction of thiosemicarbazone receptors with basic anions.**



**V. UV-Vis kinetic study of 3b (wavelength at 390 nm) with 10 equiv. of fluoride anion in acetonitrile, from 0 to 10 min of interaction.**

