

# New amino acid-based thiosemicarbazones and hydrazones: synthesis and evaluation as fluorimetric chemosensors in aqueous mixtures

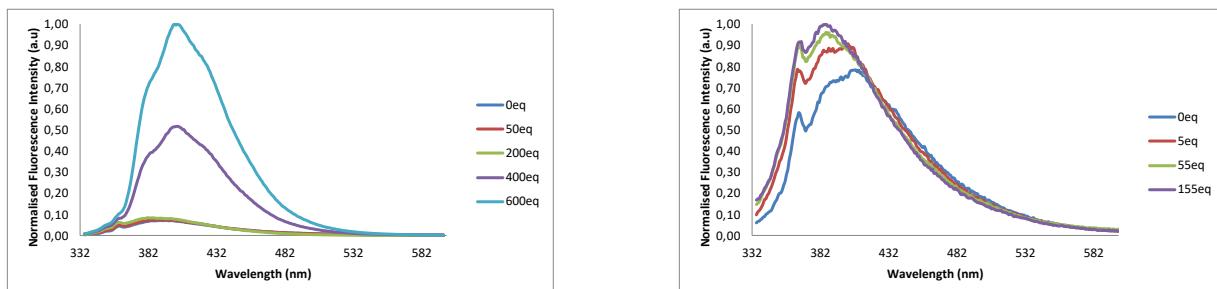
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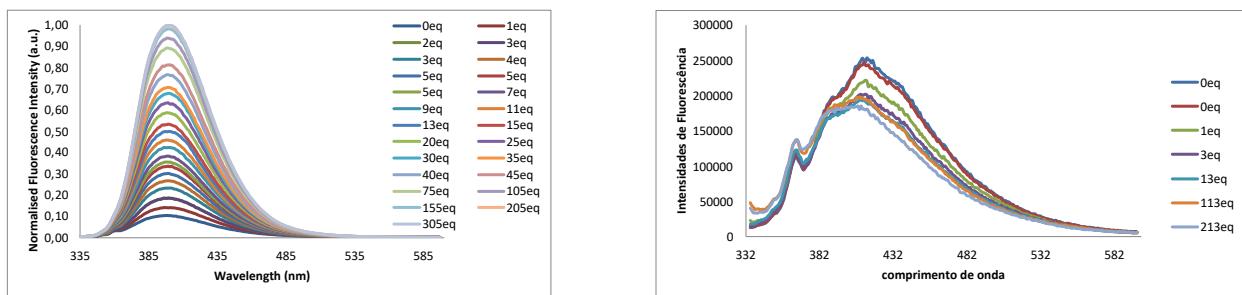
## Supplementary Material

1. Spectrofluorimetric titrations of phenylalanine **3c** with several cations and anions in ACN and ACN/H<sub>2</sub>O (20:80).
2. Spectrofluorimetric titrations of phenylalanine **3d** with several cations and anions in ACN and ACN/H<sub>2</sub>O (20:80).

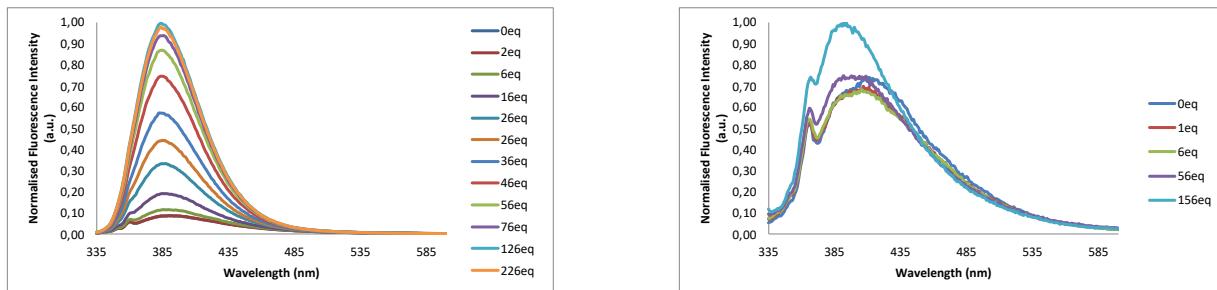
**1. Spectrofluorimetric titrations of phenylalanine **3c** with several cations and anions in ACN and ACN/H<sub>2</sub>O (20:80).**



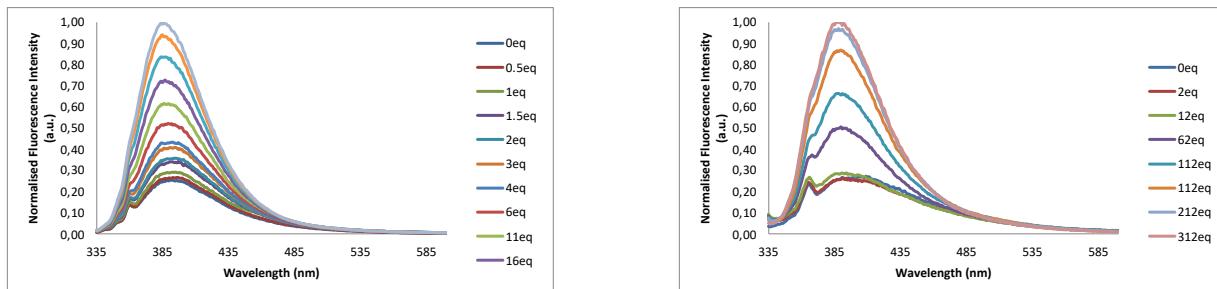
**Figure S1.** Spectrofluorimetric titration of **3c** with Cu<sup>+</sup> in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



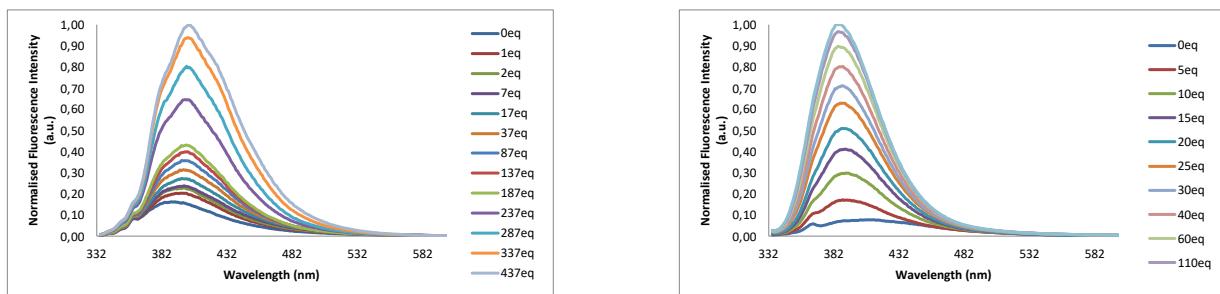
**Figure S2.** Spectrofluorimetric titration of **3c** with Cd<sup>2+</sup> in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



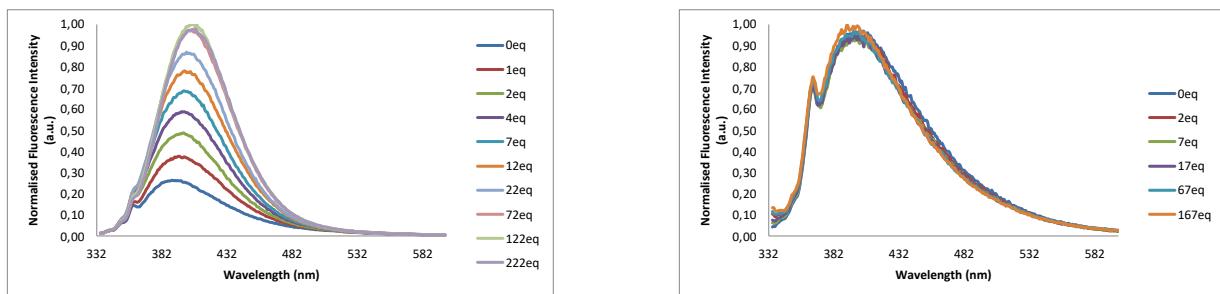
**Figure S3.** Spectrofluorimetric titration of **3c** with Fe<sup>2+</sup> in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



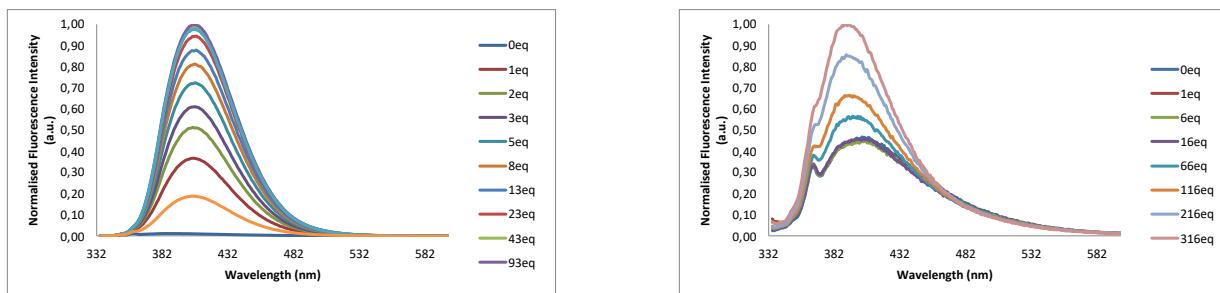
**Figure S4.** Spectrofluorimetric titration of **3c** with Ni<sup>2+</sup> in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



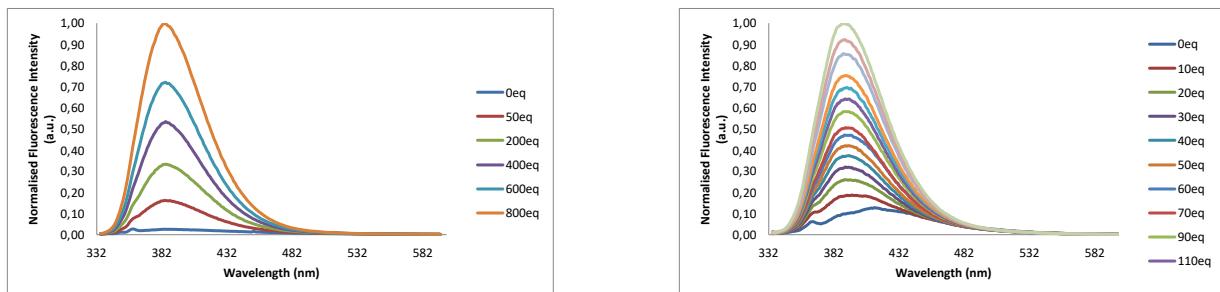
**Figure S5.** Spectrofluorimetric titration of **3c** with  $\text{Hg}^{2+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



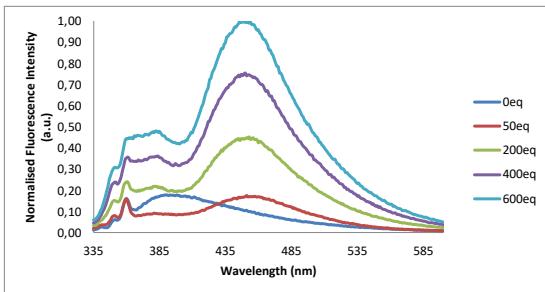
**Figure S6.** Spectrofluorimetric titration of **3c** with  $\text{Pb}^{2+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



**Figure S7.** Spectrofluorimetric titration of **3c** with  $\text{Zn}^{2+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).

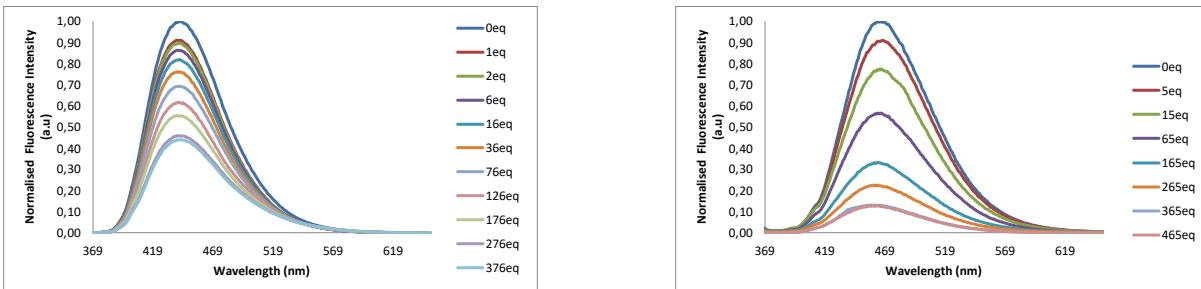


**Figure S8.** Spectrofluorimetric titration of **3c** with  $\text{Cr}^{3+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).

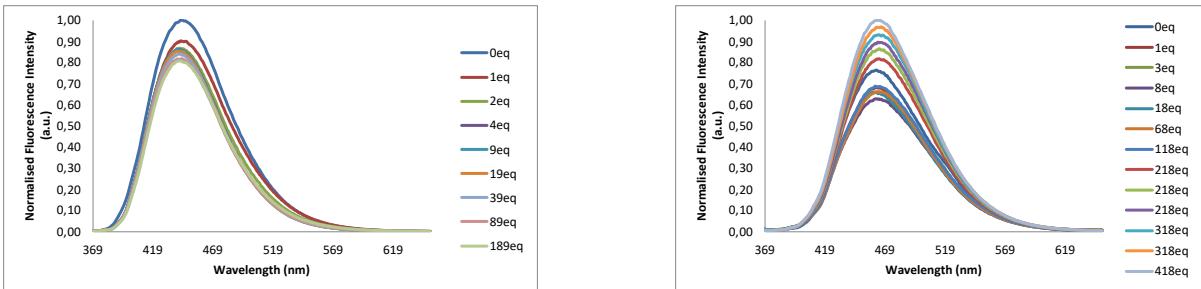


**Figure S9.** Spectrofluorimetric titration of **3c** with  $\text{HO}^-$  in ACN solution ( $1.0 \times 10^{-5}$  M).

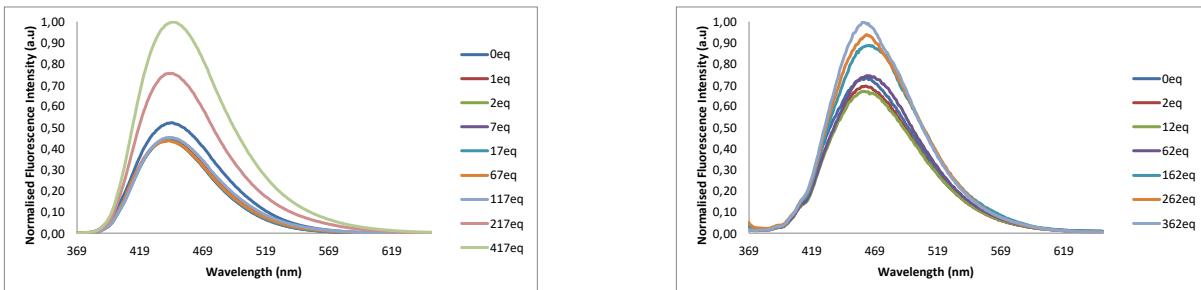
## 2. Spectrofluorimetric titrations of phenylalanine **3d** with several cations and anions in ACN and ACN/H<sub>2</sub>O (20:80).



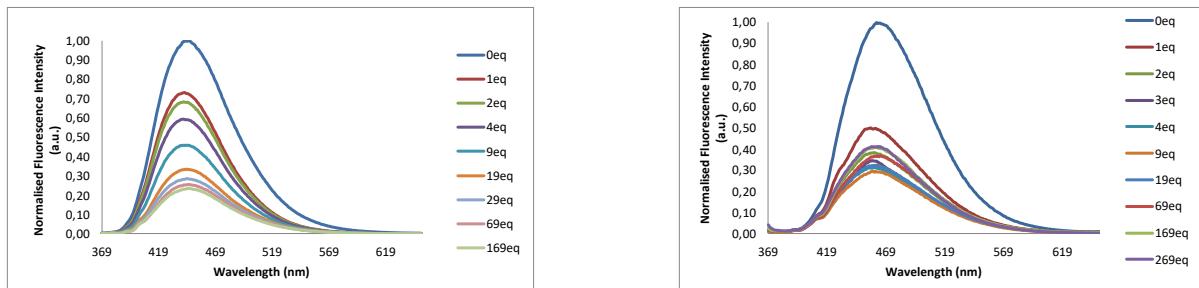
**Figure S10.** Spectrofluorimetric titration of **3d** with  $\text{Pd}^{2+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



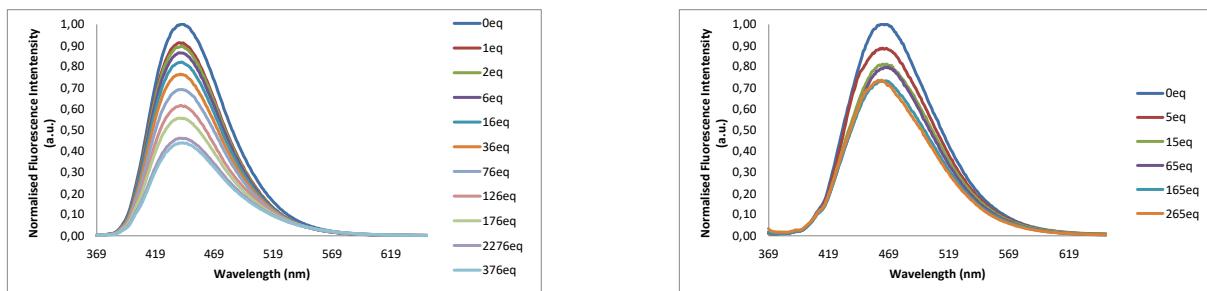
**Figure S11.** Spectrofluorimetric titration of **3d** with  $\text{Fe}^{2+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



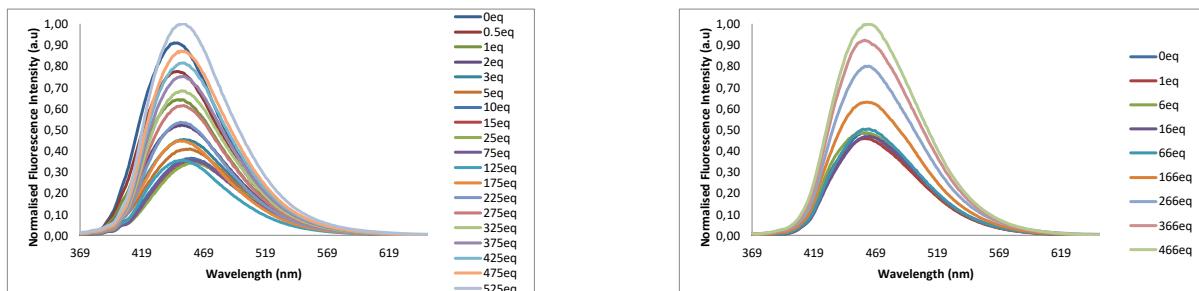
**Figure S12.** Spectrofluorimetric titration of **3d** with  $\text{Ni}^{2+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



**Figure S13.** Spectrofluorimetric titration of **3d** with  $\text{Hg}^{2+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



**Figure S14.** Spectrofluorimetric titration of **3d** with  $\text{Pb}^{2+}$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).



**Figure S15.** Spectrofluorimetric titration of **3d** with  $\text{HO}^-$  in ACN solution ( $1.0 \times 10^{-5}$  M) (left) and in ACN/H<sub>2</sub>O (20:80) solution ( $1.0 \times 10^{-5}$  M) (right).