Electronic Supplementary Information

Highly Selective and Sensitive Colorimetric/ Fluorometric Dual Mode Detection of Relevant Biogenic Amines

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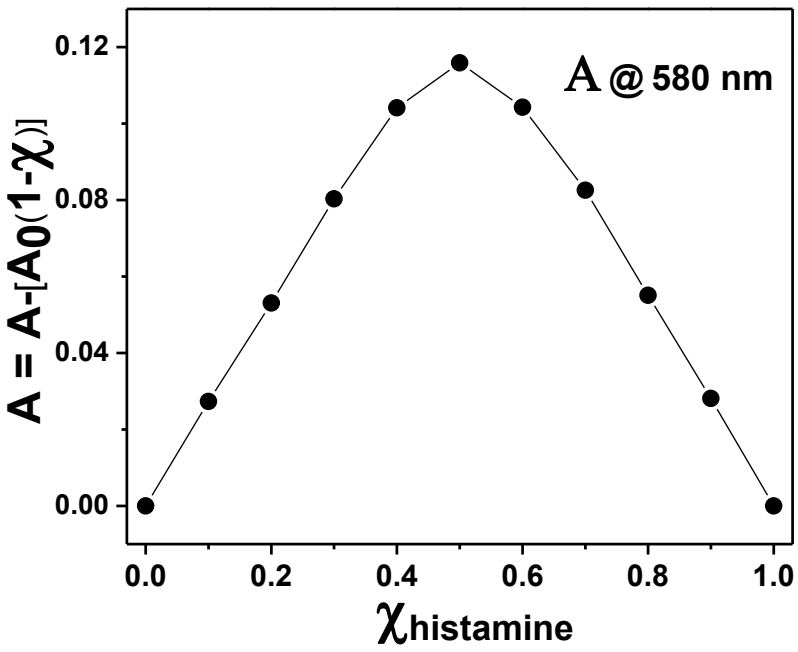

Fig. S1 Job's plot for the binding of **1** with histamine in $CHCl_3$. The total concentration of **1** and histamine is 15 μM. A and A_0 (the initial absorbance of **1**) are the absorbance values at 580 nm. UV/vis spectra were recorded with a 5-mm path-length cuvette.

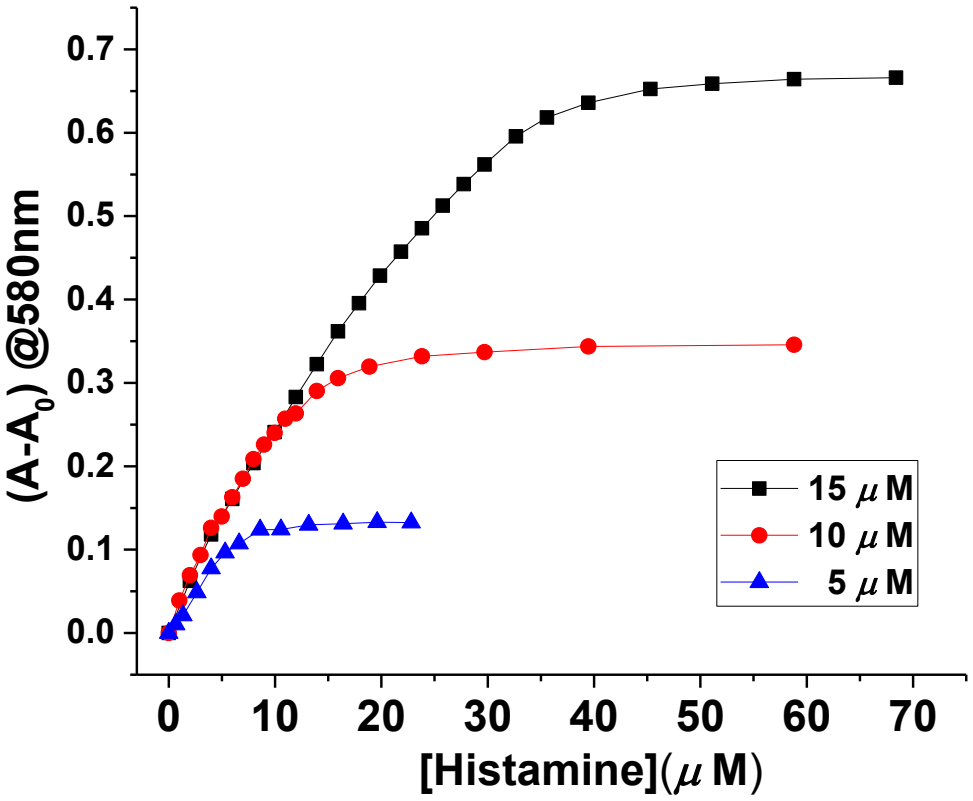

Fig. S2 Optical absorption titrations of **1** ($CHCl_3$ solutions at different concentration) with histamine. Variation of the absorbance at 580 nm as a function of the concentration of histamine added.

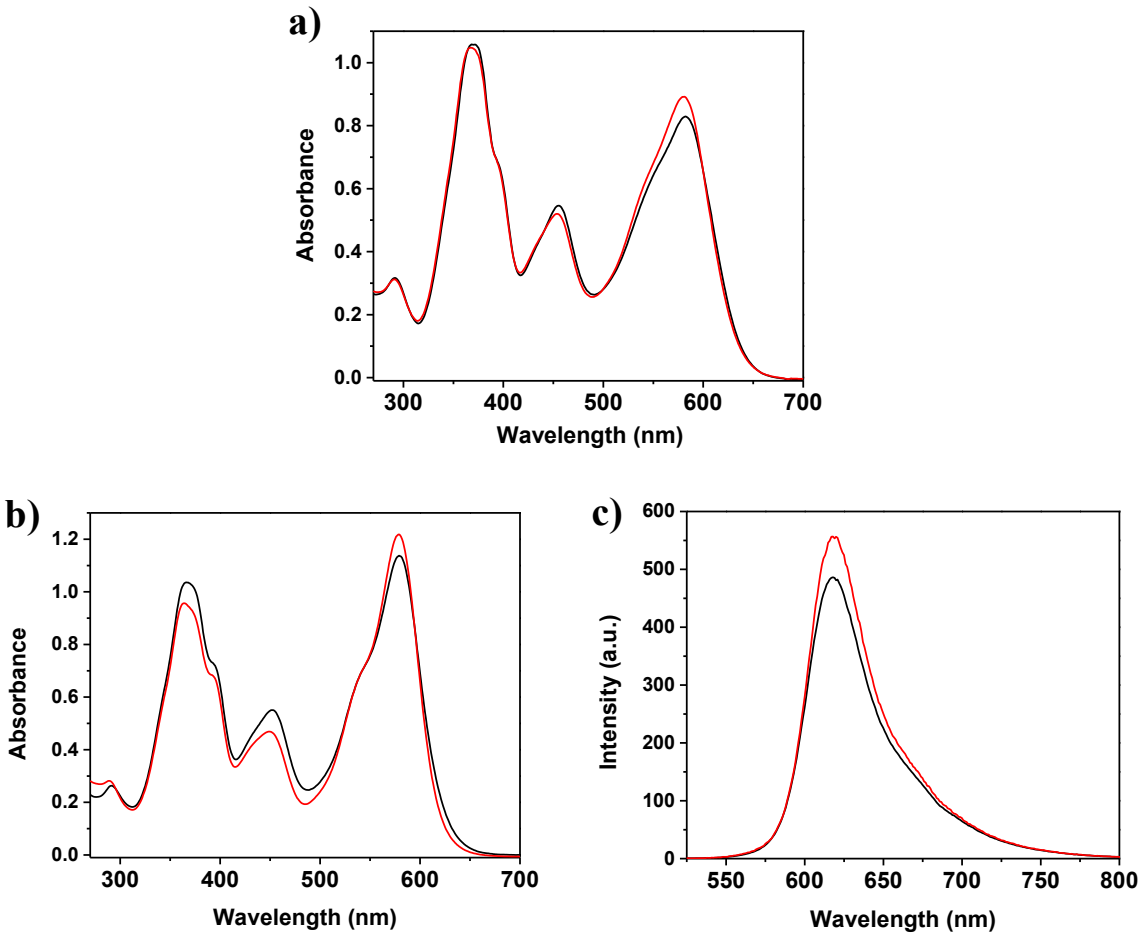

Fig. S3 **a)** Optical absorption spectra of **1** (3 mL, 15 μM solution in $CHCl_3$, black line) and after the addition of 6 μL of methanol (red line). **b)** Optical absorption and **c)** fluorescence spectra of **1** (15 μM solution in $CHCl_3$) after the addition of an equimolar amount of histamine dissolved in chloroform (black line) or methanol (red line).

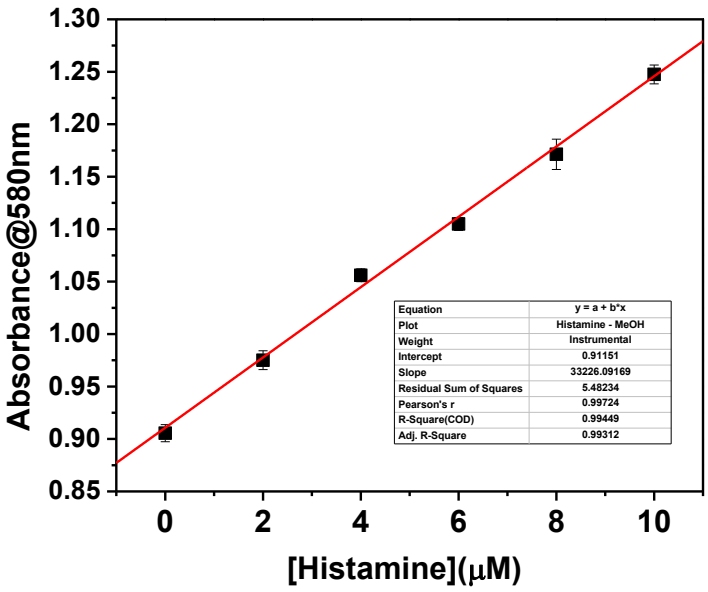

Fig. S4 Variation of the absorbance of **1** (3 mL, 15 μM solution in $CHCl_3$) at 580 nm as a function of the concentration of histamine added (solution in MeOH, 6 μL). The absorbance of the first point is that related to **1** upon addition of 6 μL of MeOH. The solid line represents the linear best fit.

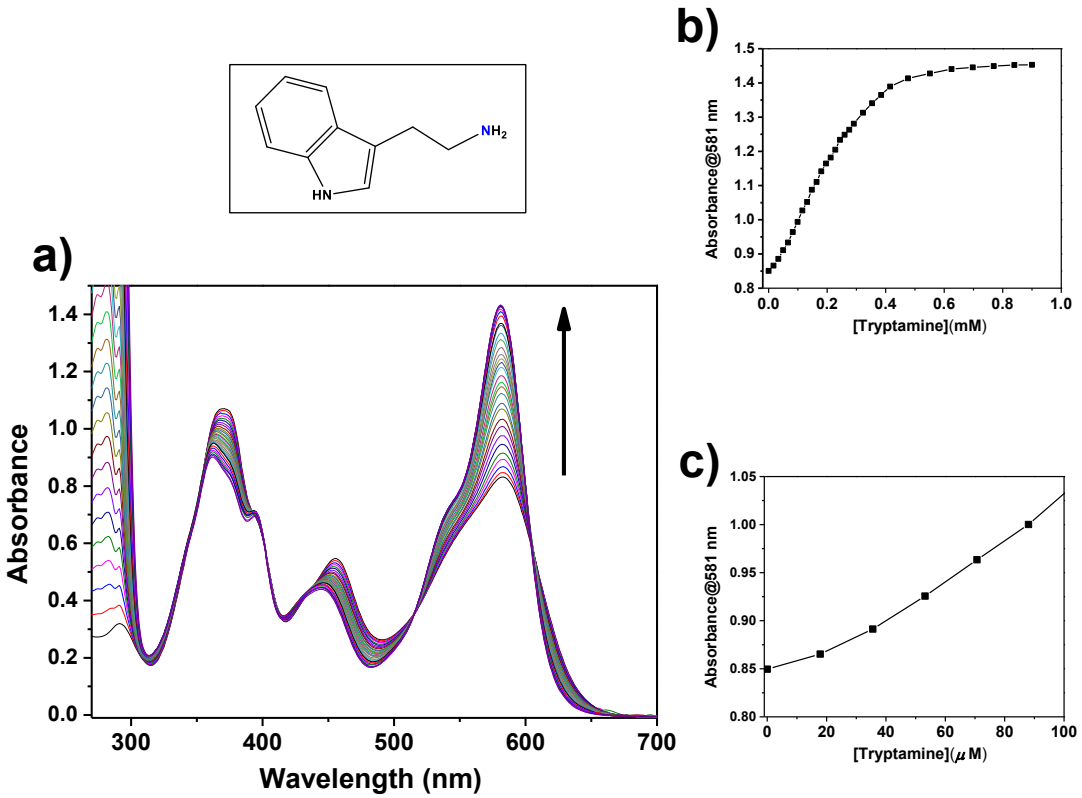

Fig. S5 **a)** Optical absorption titration curves of **1** (15 μM solution in $CHCl_3$) with addition of tryptamine. The concentration of tryptamine added varied from 0 to 0.9 mM. **b)** Variation of the absorbance at 581 nm as a function of the concentration of tryptamine added. **c)** Variation of the absorbance at 581 nm as a function of the concentration of tryptamine added (expanded view up to 100 μM).

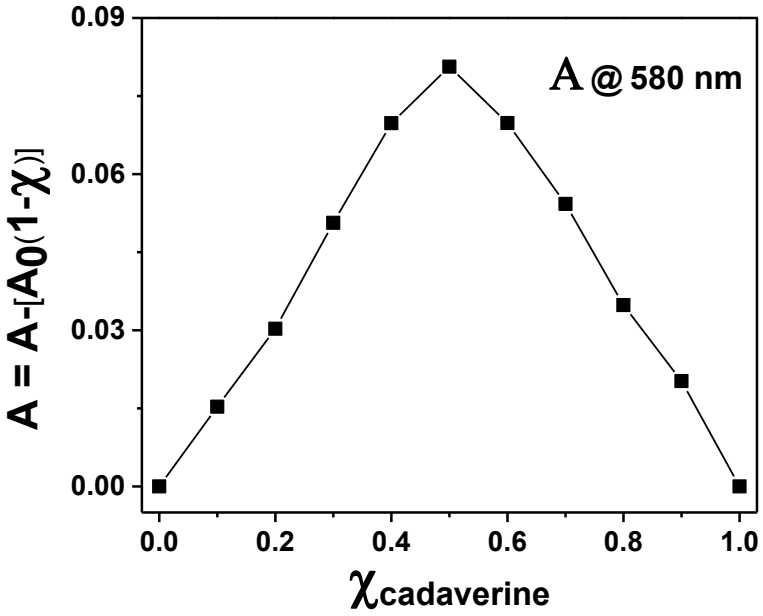

Fig. S6 Job's plot for the binding of **1** with cadaverine in $CHCl_3$. The total concentration of **1** and cadaverine is 15 μM. A and A_0 (the initial absorbance of **1**) are the absorbance values at 580 nm. UV/vis spectra were recorded with a 5-mm path-length cuvette.

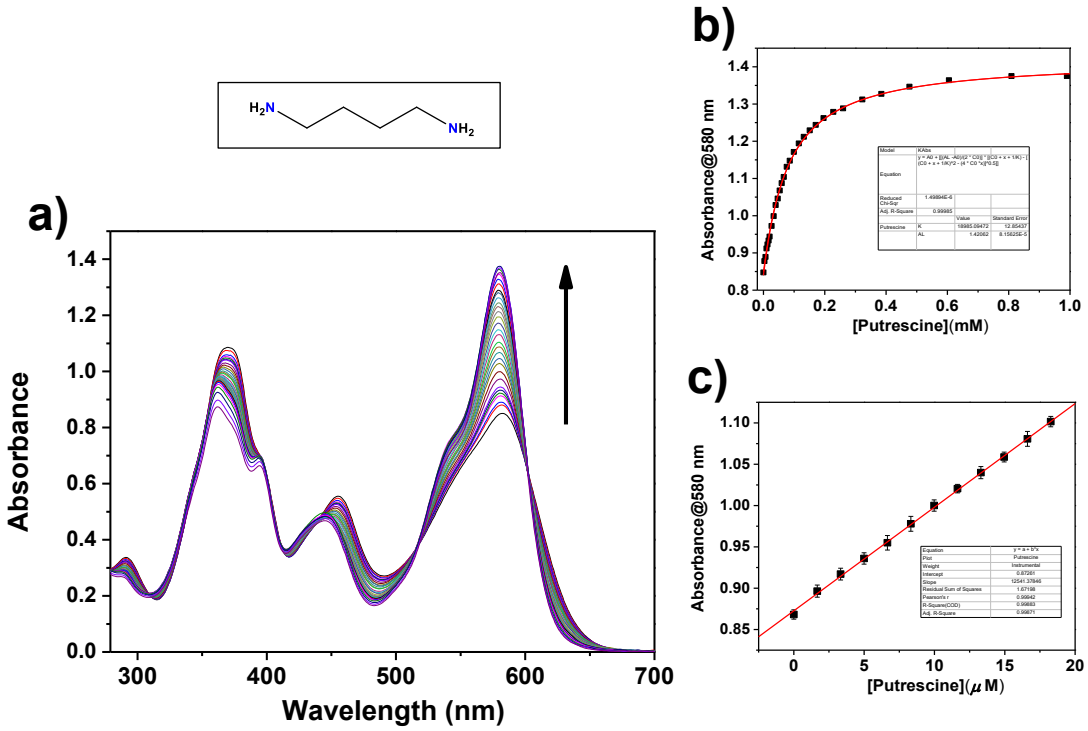

Fig. S7 **a)** Optical absorption titration curves of **1** (15 μM solution in $CHCl_3$) with addition of putrescine. The concentration of putrescine added varied from 0 to 1.0 mM. **b)** Variation of the absorbance at 580 nm as a function of the concentration of putrescine added. The solid line represents the curve fitting analysis with eqn (2). **c)** Linear best fit in the linear dynamic range (weight given by data error bars).

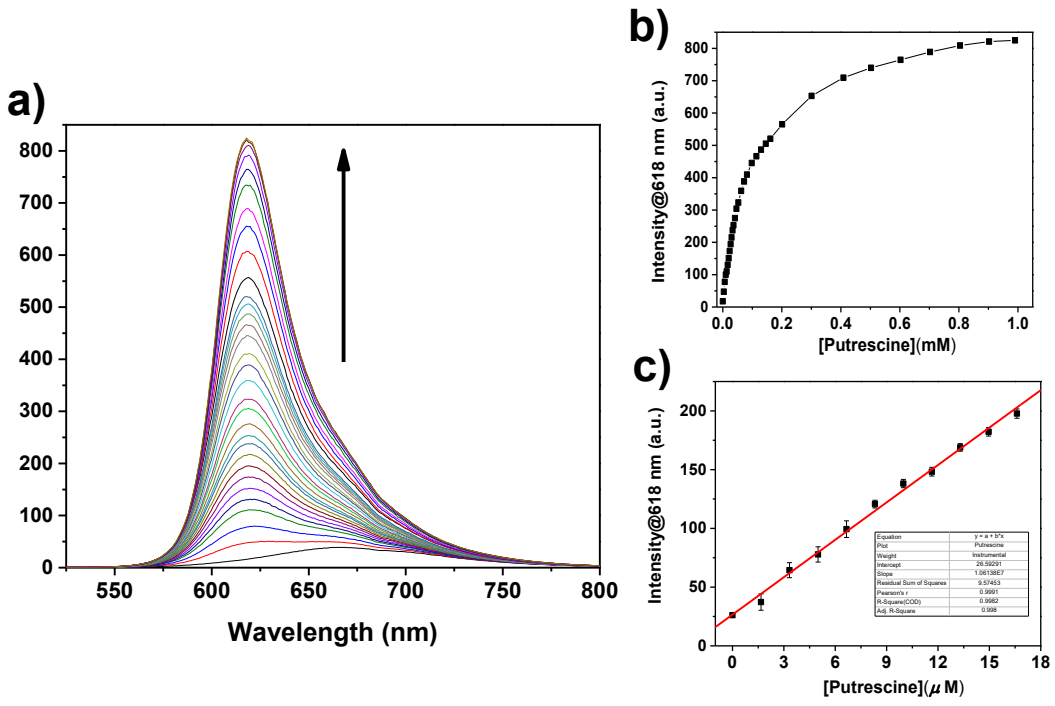

Fig. S8 **a)** Fluorescence titration curves of **1** (15 μM solution in $CHCl_3$; λ_{exc} = 518 nm) with addition of putrescine. The concentration of putrescine added varied from 0 to 1.0 mM. **b)** Variation of the fluorescence intensity at 618 nm as a function of the concentration of putrescine added. **c)** Linear best fit in the linear dynamic range (weight given by data error bars).

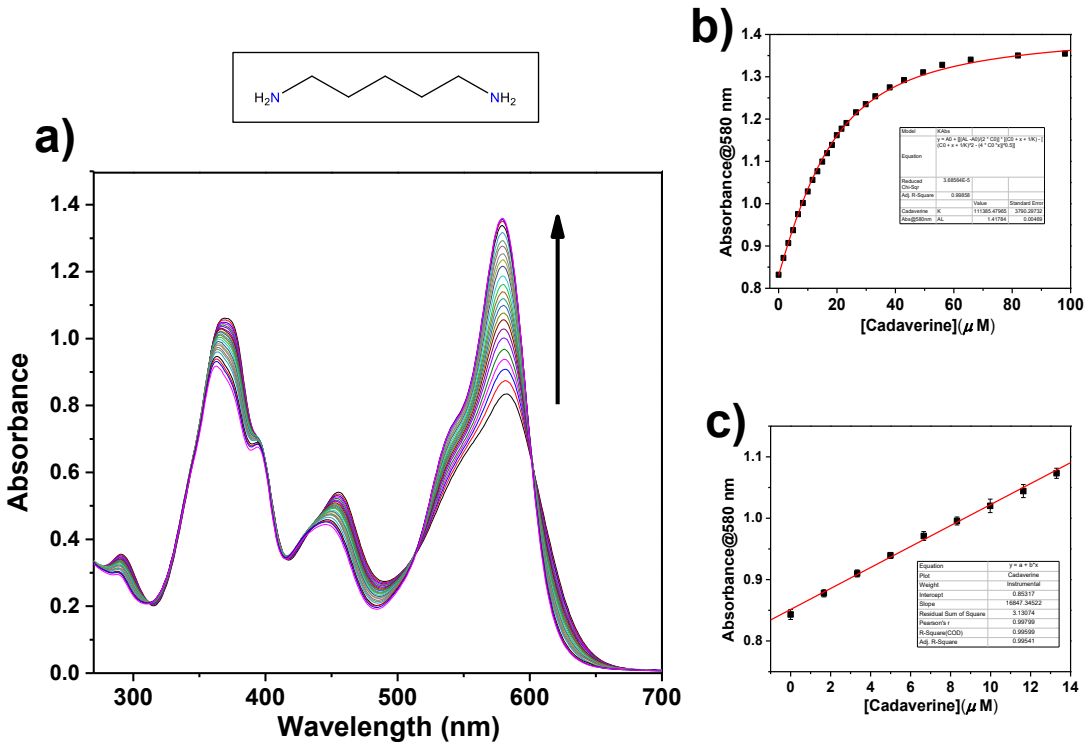

Fig. S9 **a)** Optical absorption titration curves of **1** (15 μM solution in $CHCl_3$) with addition of cadaverine. The concentration of cadaverine added varied from 0 to 100 μM. **b)** Variation of the absorbance at 580 nm as a function of the concentration of cadaverine added. The solid line represents the curve fitting analysis with eqn (2). **c)** Linear best fit in the linear dynamic range (weight given by data error bars).

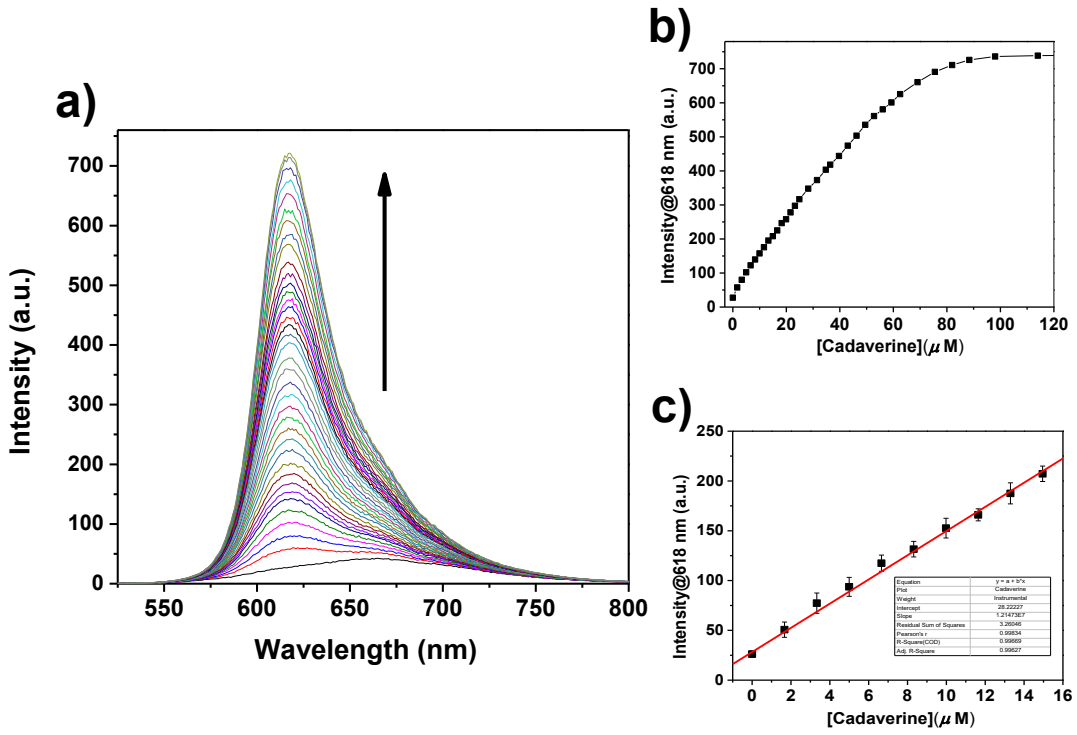

Fig. S10 **a)** Fluorescence titration curves of **1** (15 μM solution in $CHCl_3$; λ_{exc} = 514 nm) with addition of cadaverine. The concentration of cadaverine added varied from 0 to 110 μM. **b)** Variation of the fluorescence intensity at 618 nm as a function of the concentration of cadaverine added. **c)** Linear best fit in the linear dynamic range (weight given by data error bars).

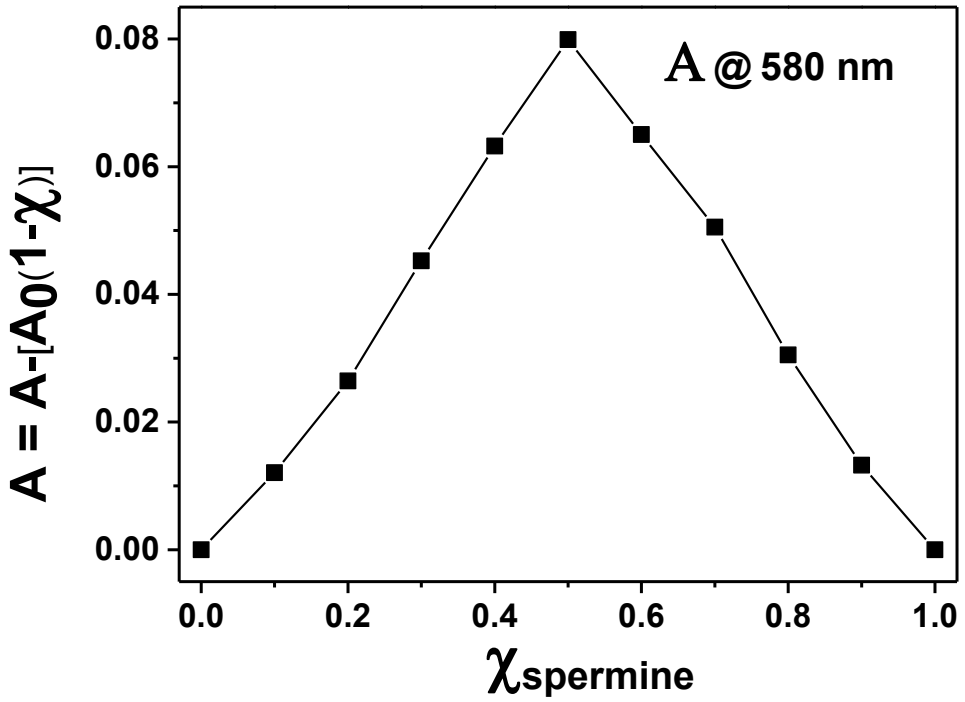

Fig. S11 Job's plot for the binding of **1** with spermine in $CHCl_3$. The total concentration of **1** and spermine is 15 μM. A and A_0 (the initial absorbance of **1**) are the absorbance values at 580 nm. UV/vis spectra were recorded with a 5-mm path-length cuvette.

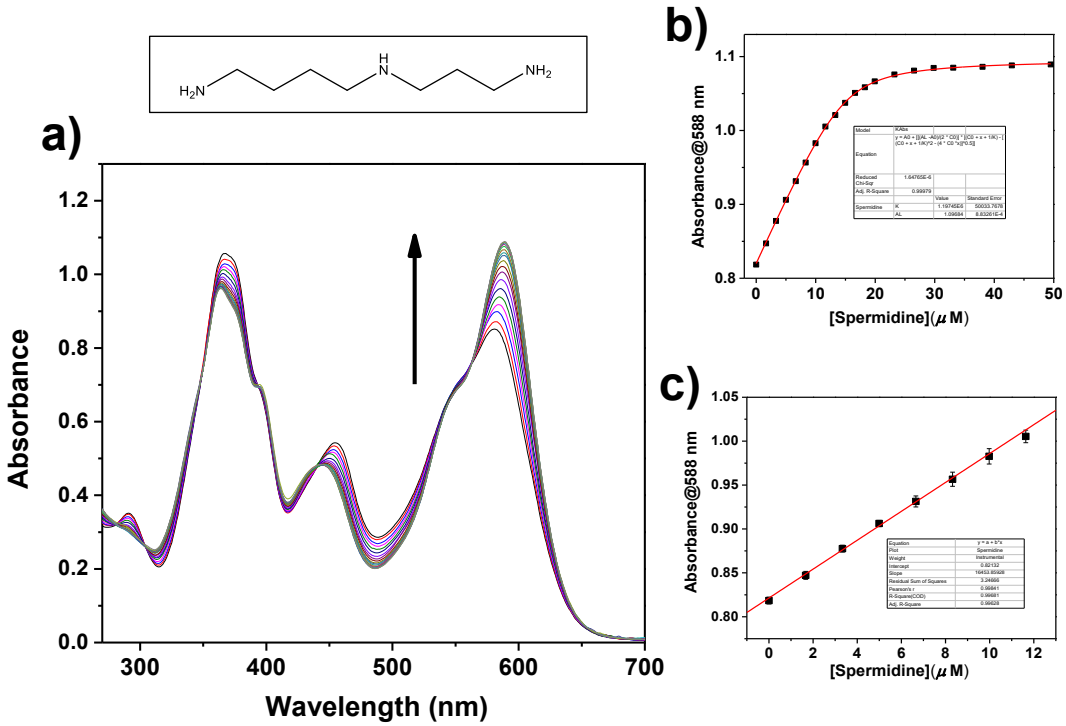

Fig. S12 **a)** Optical absorption titration curves of **1** (15 μM solution in $CHCl_3$) with addition of spermidine. The concentration of spermidine added varied from 0 to 50 μM. **b)** Variation of the absorbance at 588 nm as a function of the concentration of spermidine added. The solid line represents the curve fitting analysis with eqn (2). **c)** Linear best fit in the linear dynamic range (weight given by data error bars).

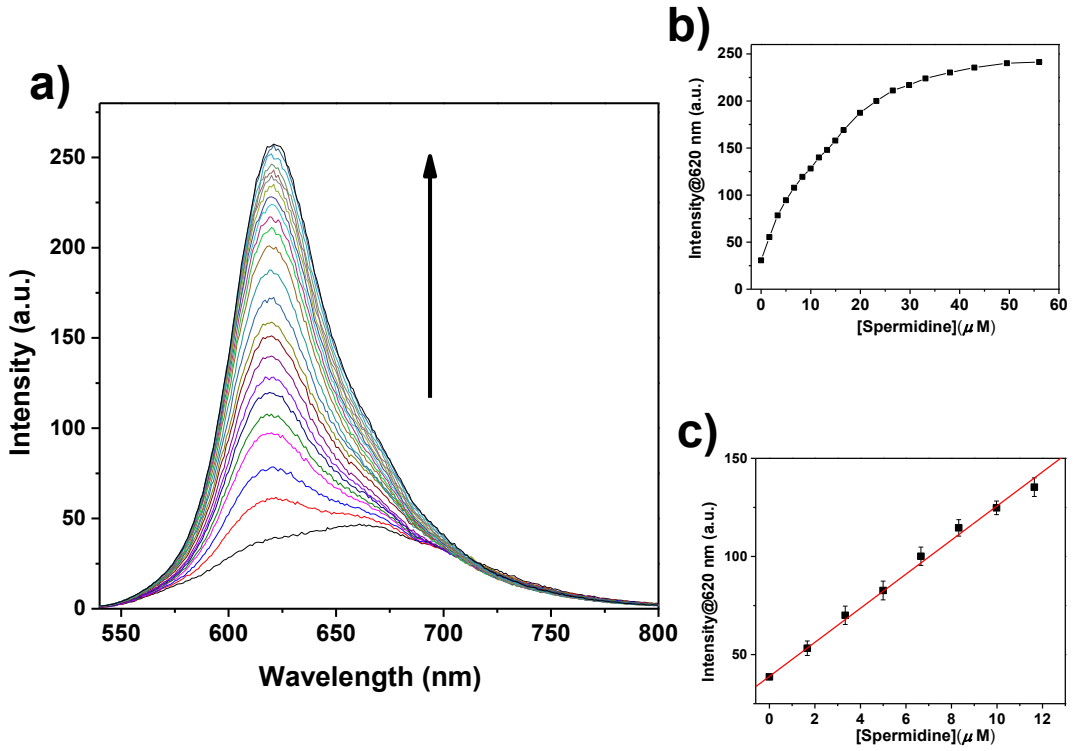

Fig. S13 **a)** Fluorescence titration curves of **1** (15 μM solution in $CHCl_3$; λ_{exc} = 535 nm) with addition of spermidine. The concentration of spermidine added varied from 0 to 55 μM. **b)** Variation of the fluorescence intensity at 620 nm as a function of the concentration of spermidine added. **c)** Linear best fit in the linear dynamic range (weight given by data error bars).

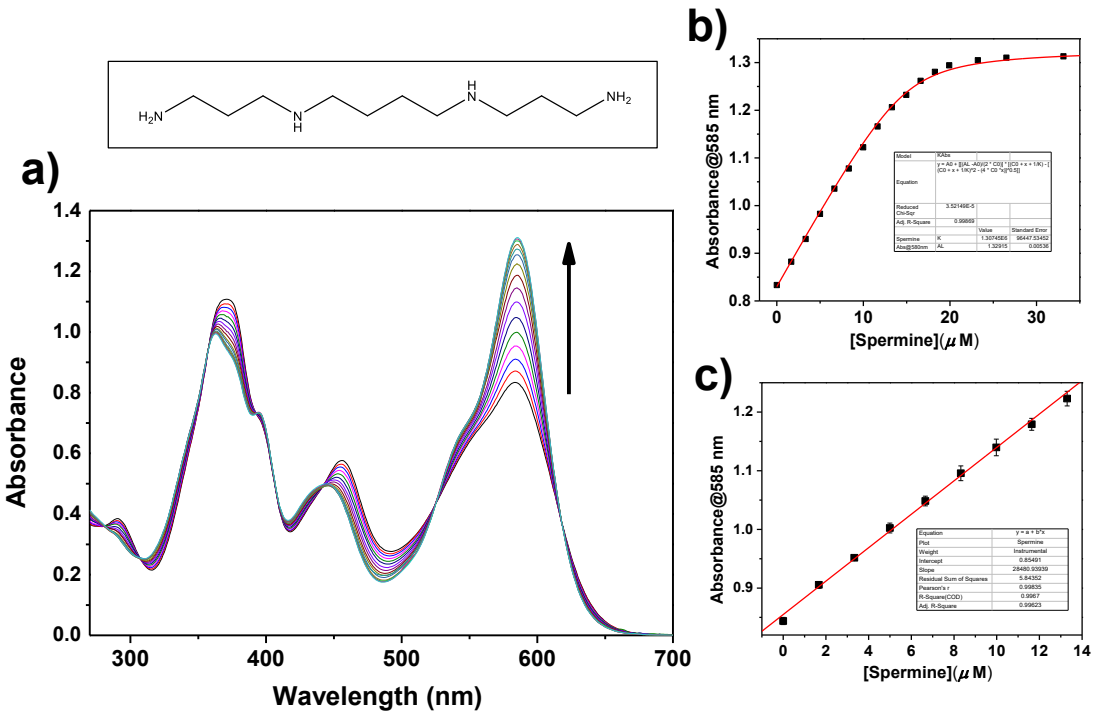

Fig. S14 **a)** Optical absorption titration curves of **1** (15 μM solution in $CHCl_3$) with addition of spermine. The concentration of spermine added varied from 0 to 40 μM. **b)** Variation of the absorbance at 585 nm as a function of the concentration of spermine added. The solid line represents the curve fitting analysis with eqn (2). **c)** Linear best fit in the linear dynamic range (weight given by data error bars).

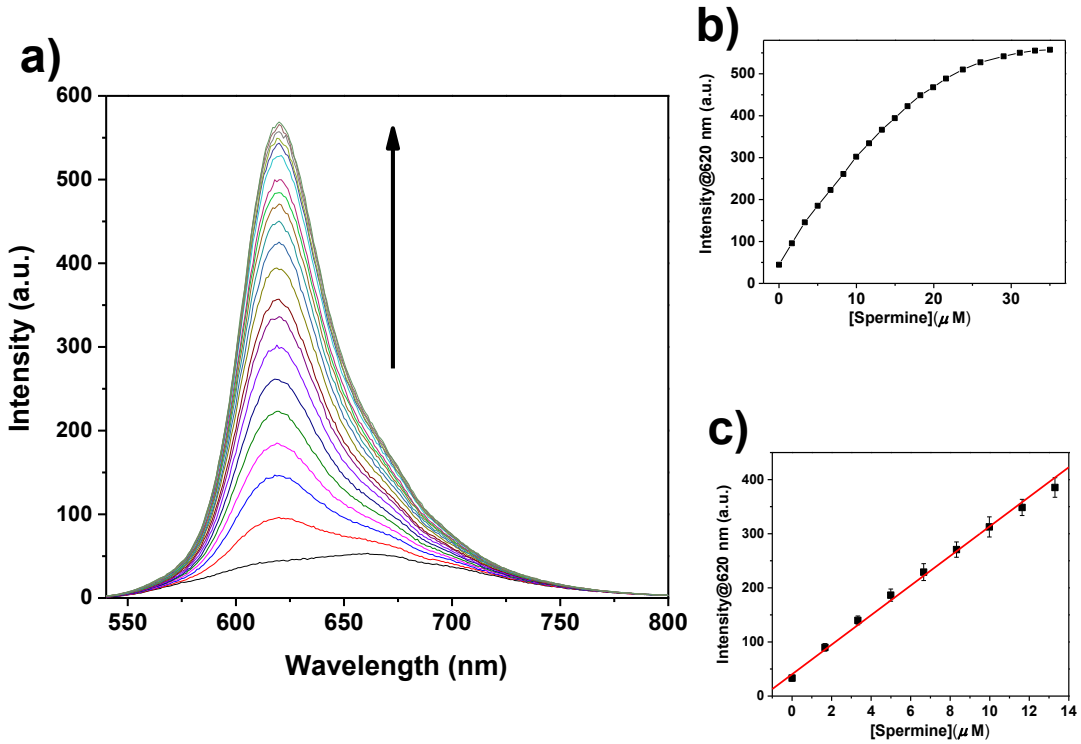

Fig. S15 **a)** Fluorescence titration curves of **1** (15 μM solution in $CHCl_3$; λ_{exc} = 525 nm) with addition of spermine. The concentration of spermidine added varied from 0 to 40 μM. **b)** Variation of the fluorescence intensity at 620 nm as a function of the concentration of spermidine added. **c)** Linear best fit in the linear dynamic range (weight given by data error bars).

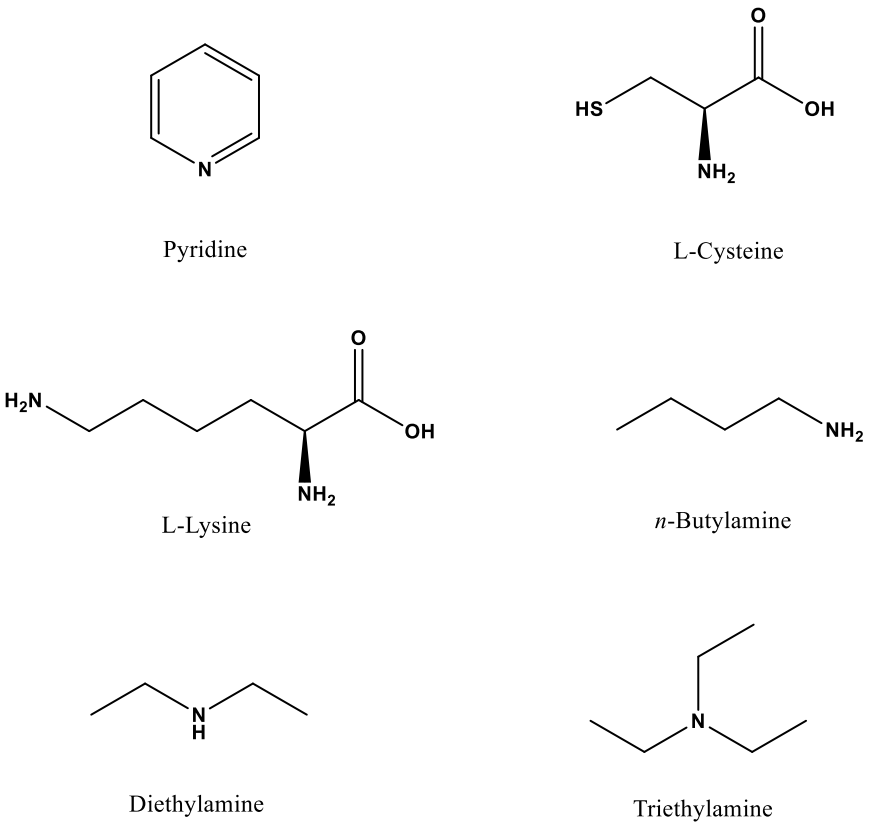

Fig. S16 Structure of the potential involved interferents.

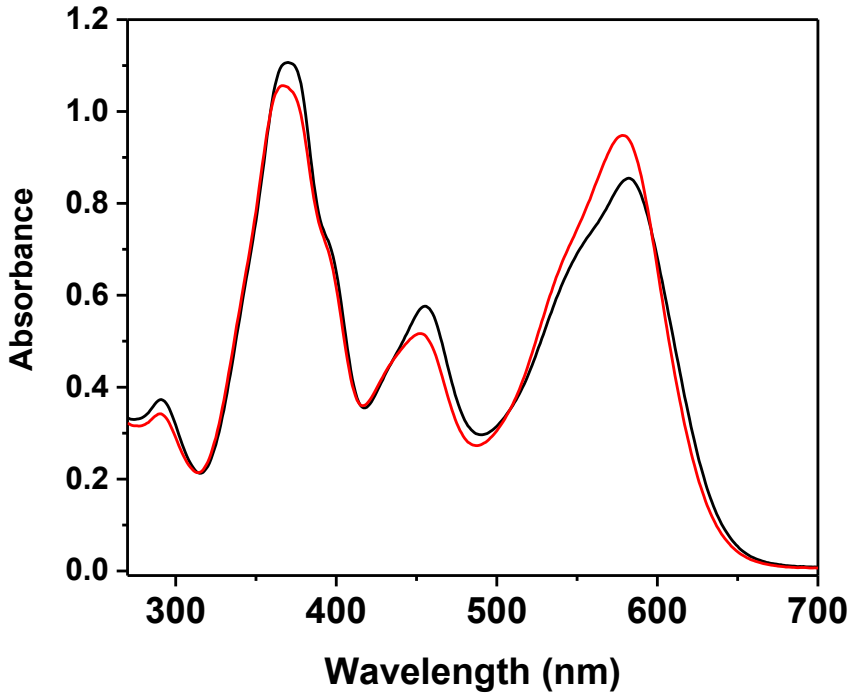

Fig. S17 Optical absorption spectra of **1** (3 mL; 15 μM solution in $CHCl_3$, black line) and after the addition of 6 μL of tuna matrix solution (red line).

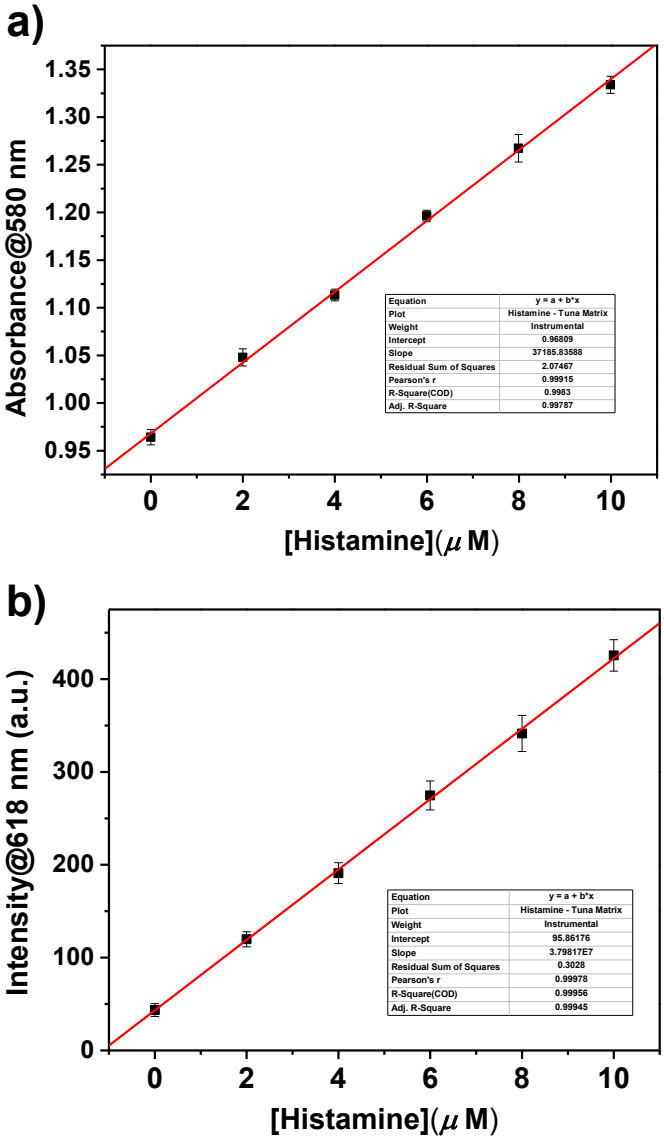

Fig. S18 Variation of **a)** absorbance at 580 nm and **b)** fluorescence at 618 nm of **1** (3 mL, 15 μM solution in $CHCl_3$) as a function of the concentration of histamine added (tuna matrix solution, 6 μL). The absorbance or fluorescence of the first point is that related to **1** upon addition of 6 μL of tuna matrix solution. The solid lines represent the linear best fit.