Electronic Supplementary Material (ESI) for RSC Advances.

Supporting material

Figure S1. Quercetin fully optimized geometry, with a dihedral angle, DA, 21.63°, according with Álvarez-Diduk *et al.* **[3]**, where the colours code is: gray for carbon, red for oxygen and white for hydrogen atoms.

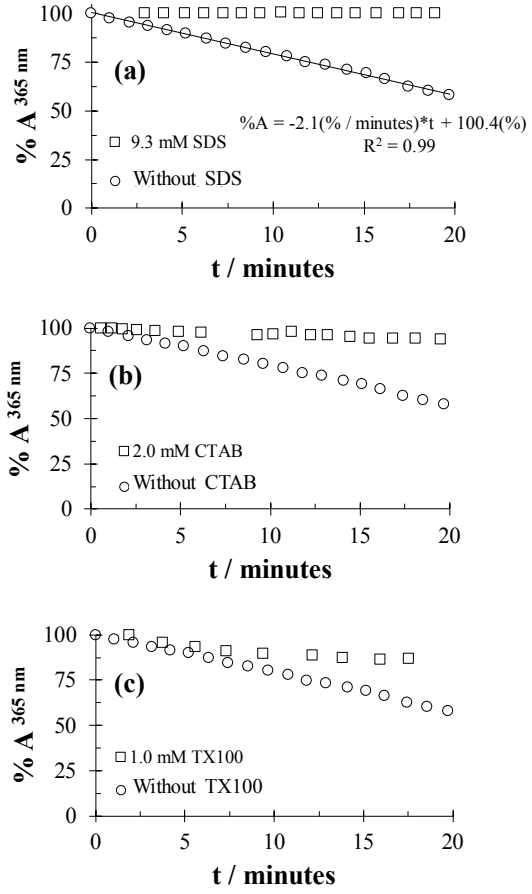

Figure S2. Comparison of time variation of the absorbance percentage at 365 nm, referred to its t = 0 value, recorded in a quercetin (5 x 10^{-5} M) aqueous solution, (28.0 ± 0.1) °C, and pH 7 ± 0.2, in the absence (circles) and presence (squares) of different surfactants: a) SDS, b) CTAB and c) TX-100, all at a set concentration higher than its respective CMC value. The line was obtained by linear fit of the data in the absence of surfactant molecules.

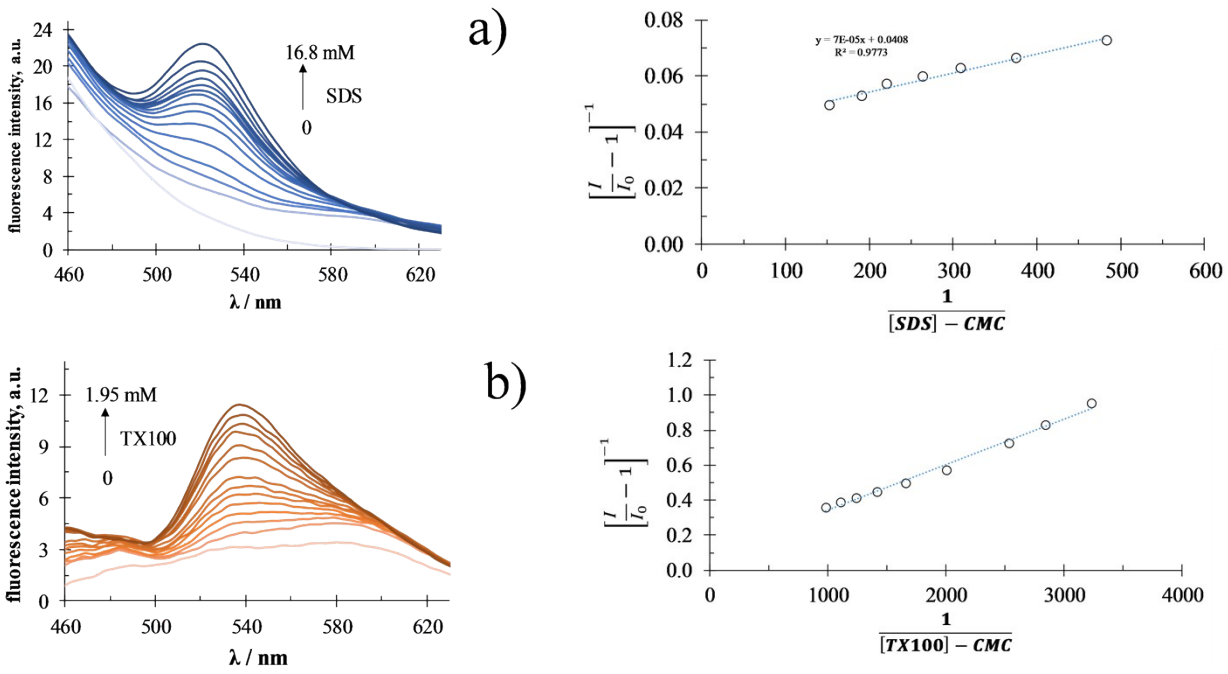

Figure S3. Fluorescence emission spectra recorded in a 6 x 10^{-5} M quercetin aqueous solution containing different SDS (a) or TX100 (b) concentrations, indicated in the figure using 350 nm excitation wavelength at (28.0 ± 0.1) °C, pH 7 ± 0.2. (b) Plot $[I/I_0 - 1]^{-1}$ *vs.* 1 / [Surf.] – CMC obtained for the fluorescence intensity, I, in a) and CMC in Table 1.

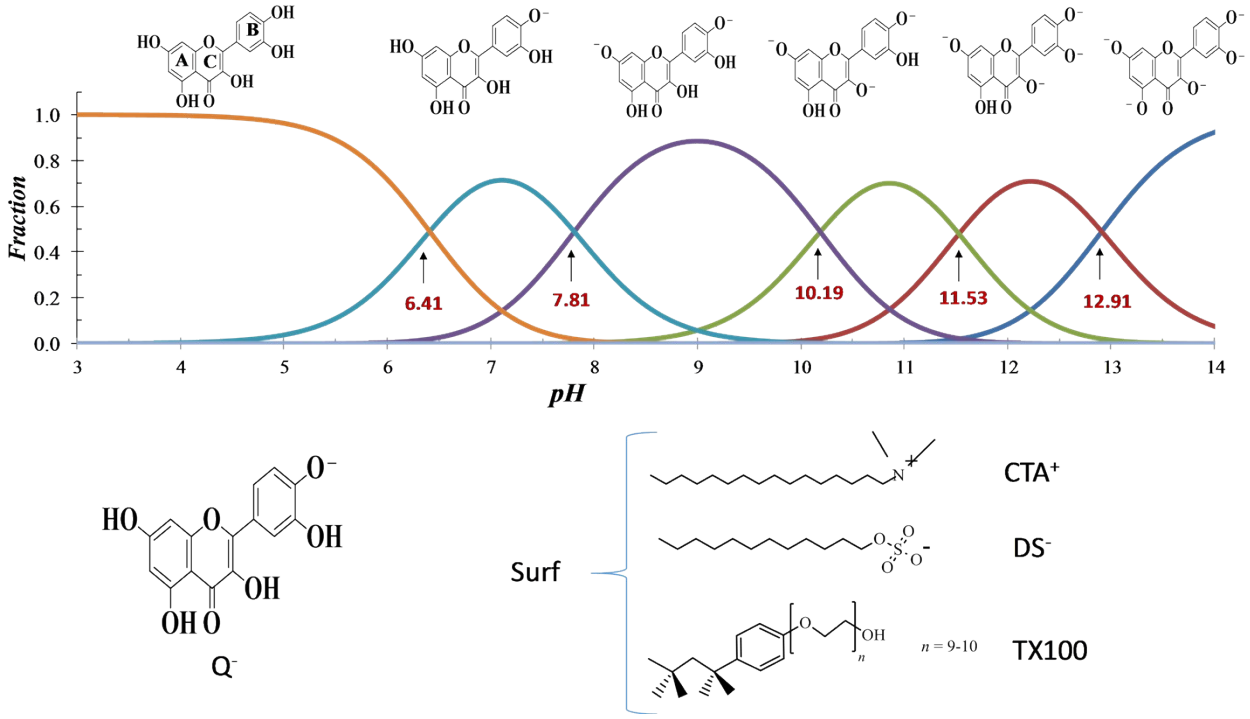

Figure S4. Up: Distribution diagram of the quercetin, Q, species as a function of pH constructed from the pKa values reported by Álvarez-Diduk *et al*. [3] Bottom: Quercetin predominant species at pH 7 and the different surfactants considered in this work.

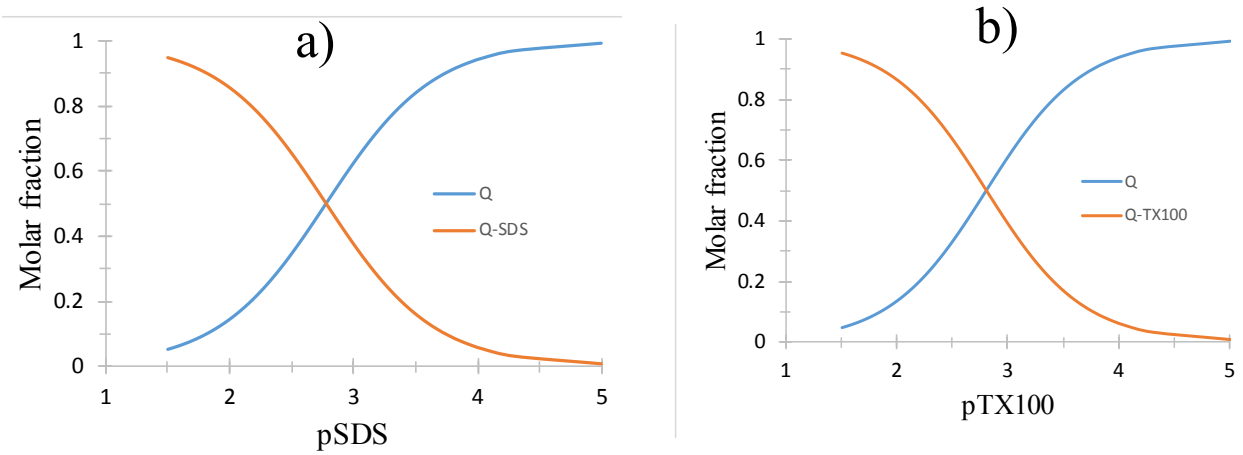

Figure S5. Distribution diagram of the quercetin, Q, species as a function of a) pSDS = −log [SDS] or b) pTX100 = −log [TX100].

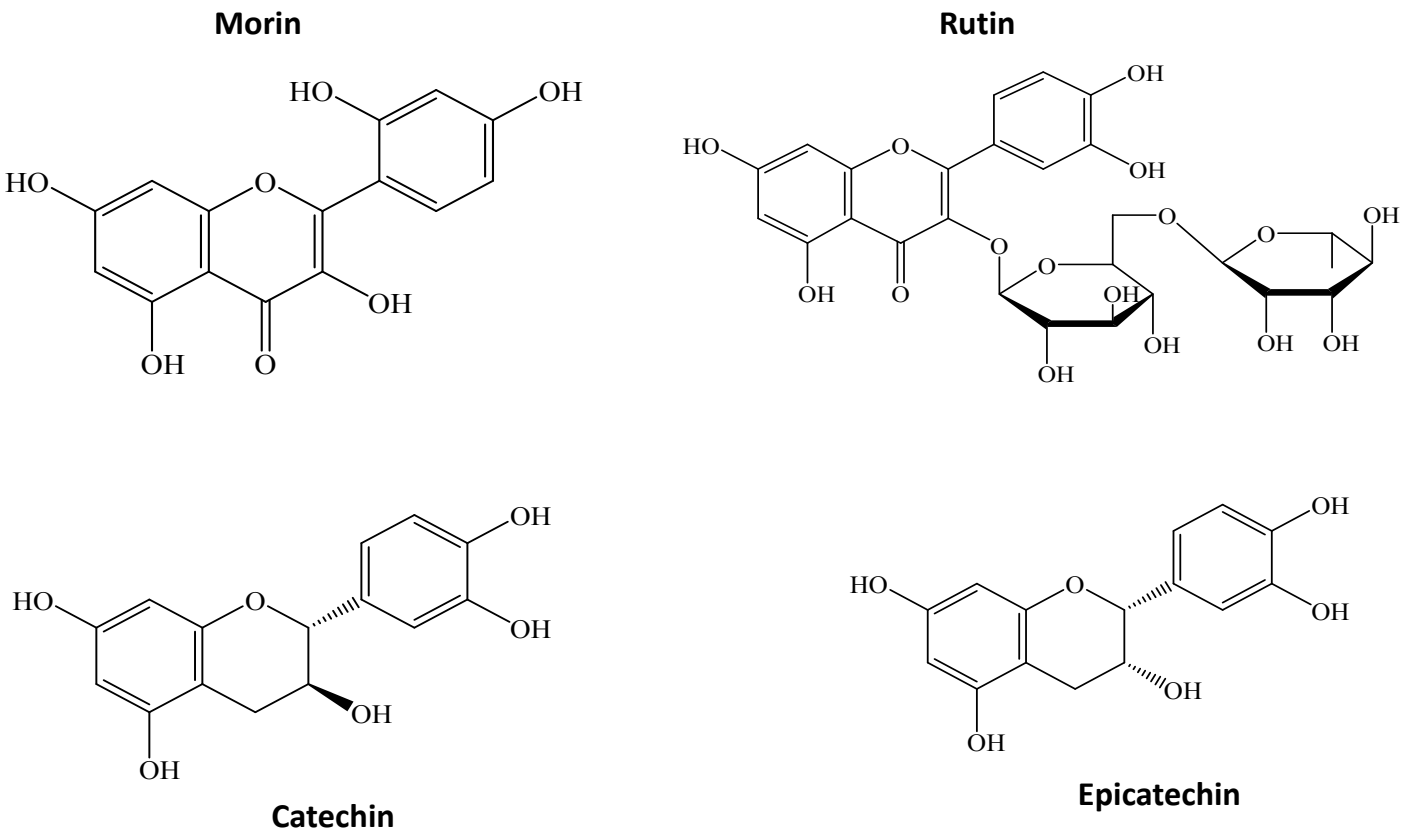

Figure S6. Molecules tested as possible interferents during the spectrofluorometric quantification of quercetin.

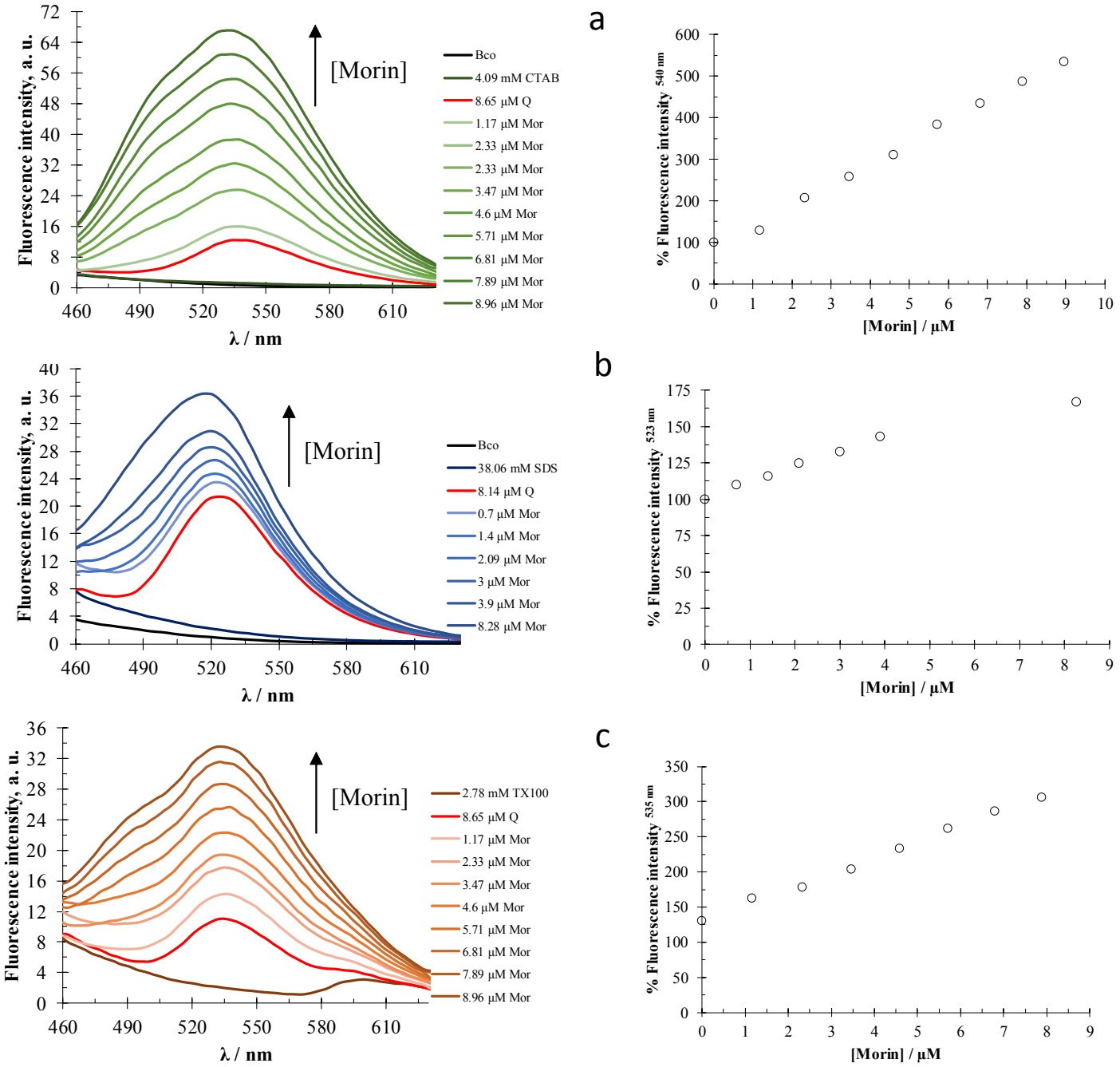

Figure S7. Fluorescence emission spectra, using an excitation wavelength of 350 nm, recorded in a) 8.65 µM Q and 4.09 mM CTAB b) 8.14 µM Q and 38.06 mM SDS and c) 8.65 µM Q and 2.78 mM TX-100 aqueous solutions added with different morin concentrations at (28.0 ± 0.1) °C and the pH 7 ± 0.2. The fluorescence intensity variations respect to the value in the absence of morin (%) are also shown at the right of each spectra family.

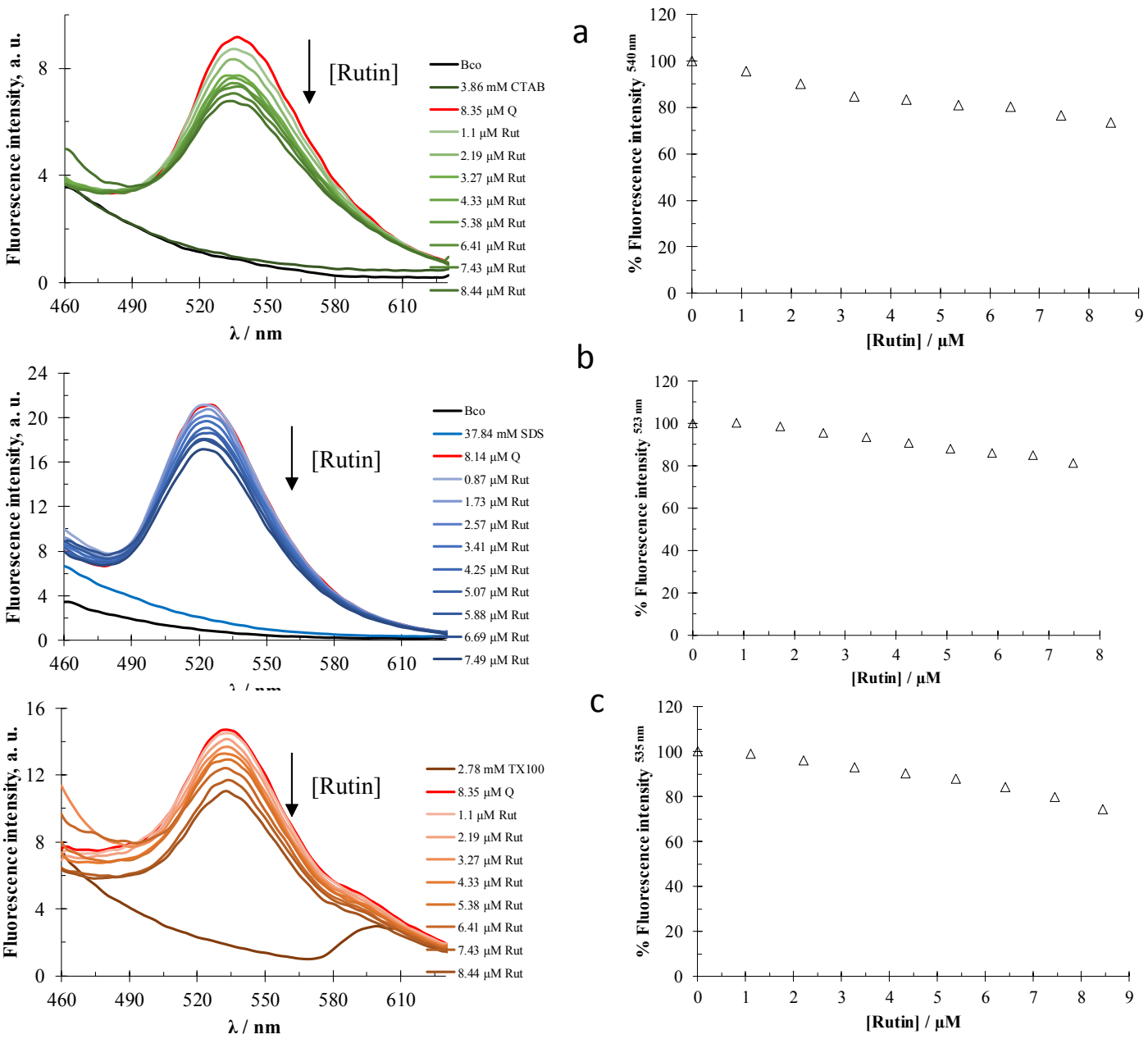

Figure S8. Fluorescence emission spectra, using an excitation wavelength of 350 nm, recorded in a) 8.35 μM Q and 3.86 mM CTAB b) 8.14 μM Q and 37.84 mM SDS and c) 8.35 μM Q and 2.78 mM TX-100 aqueous solutions added with different rutin concentrations at (28.0 ± 0.1) °C and the pH 7 ± 0.2. The fluorescence intensity variations respect to the value in the absence of rutin (%) are also shown at the right of each spectra family.

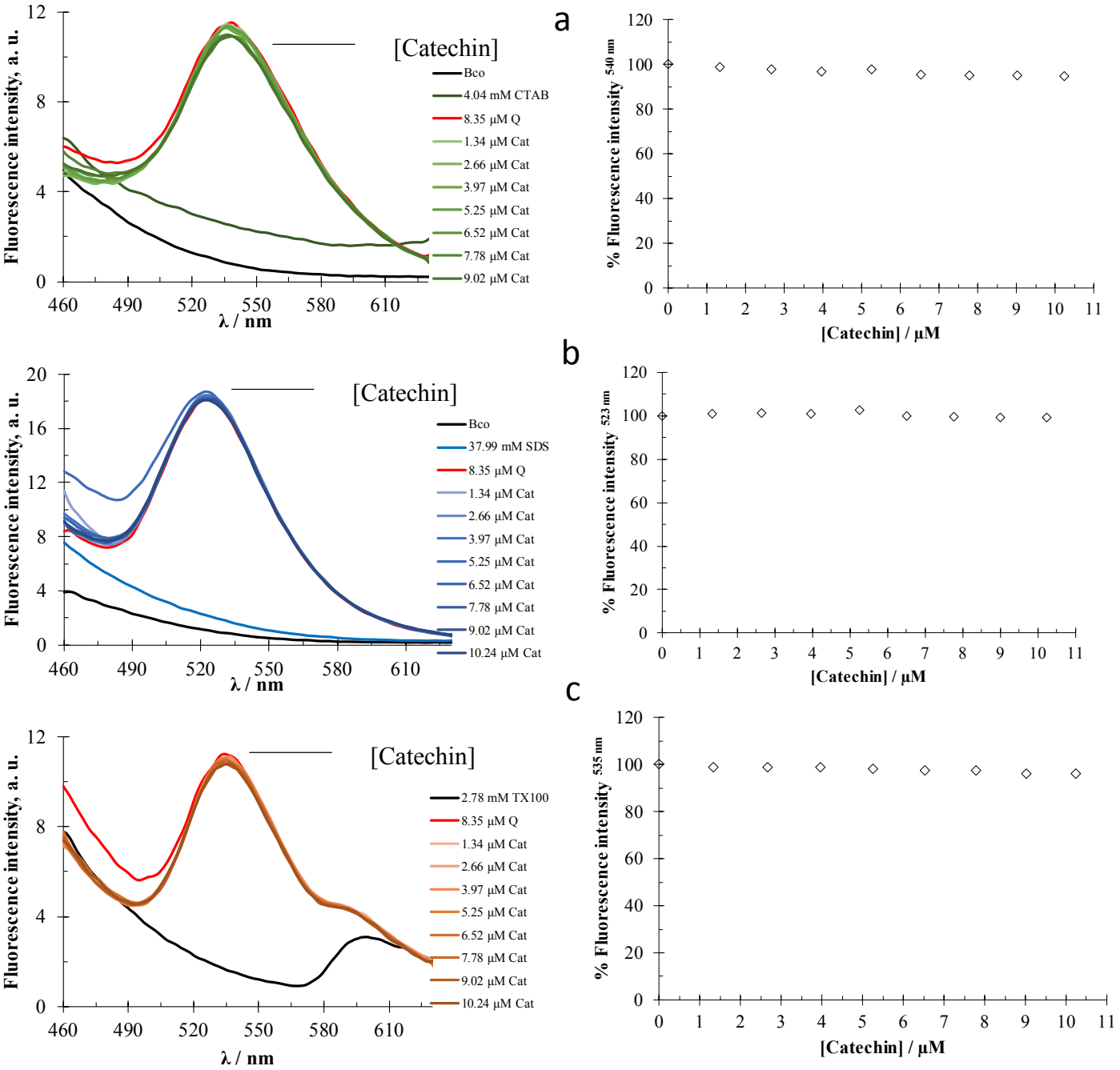

Figure S9. Fluorescence emission spectra, using an excitation wavelength of 350 nm, recorded in a) 8.35 µM Q and 4.04 mM CTAB b) 8.35 µM Q and 37.99 mM SDS and c) 8.35 µM Q and 2.78 mM TX-100 aqueous solutions added with different cathecin concentrations at (28.0 ± 0.1) °C and the pH 7 ± 0.2. The fluorescence intensity variations respect to the value in the absence of catechin (%) are also shown at the right of each spectra family.

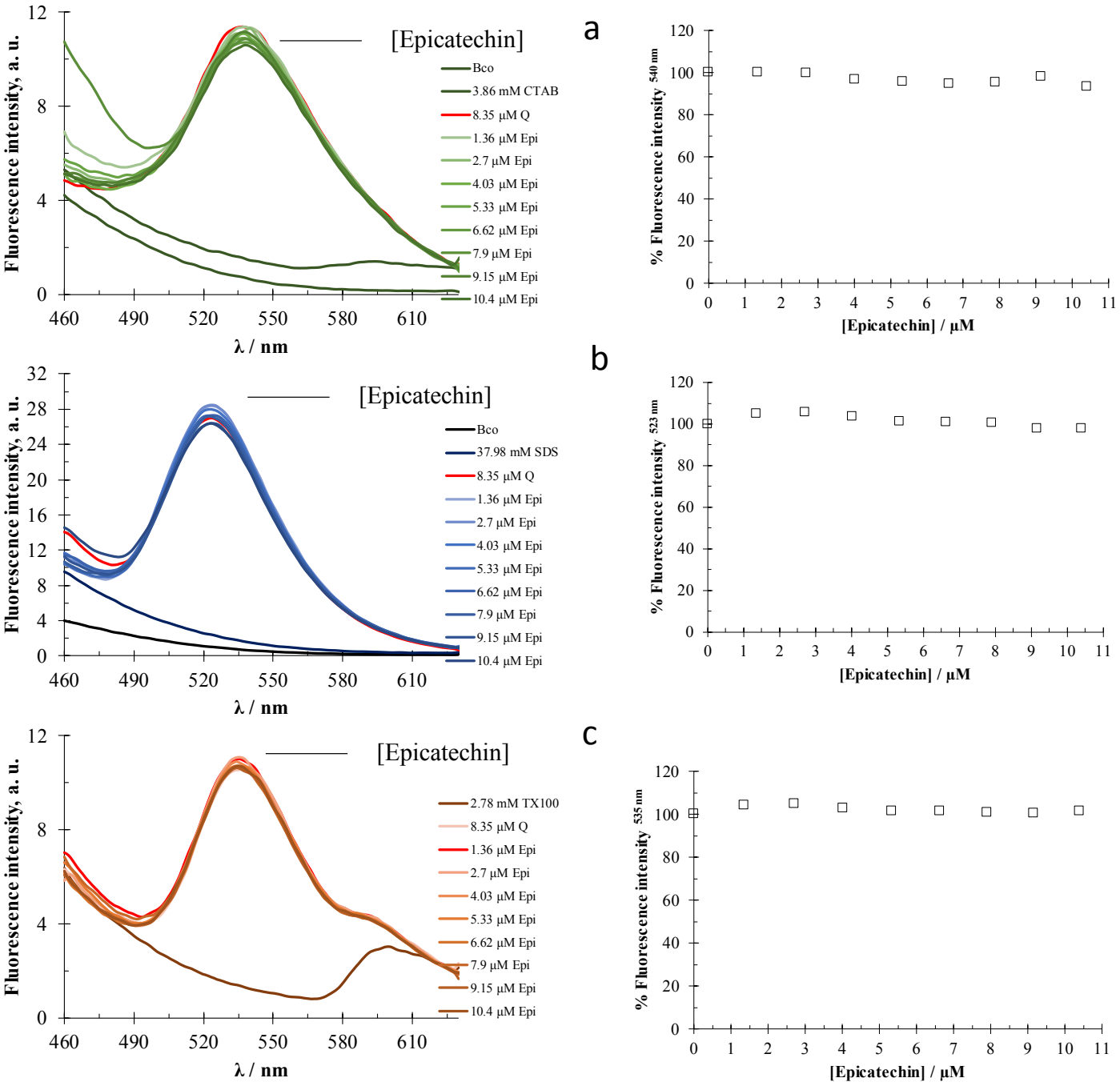

Figure S10. Fluorescence emission spectra, using an excitation wavelength of 350 nm, recorded in a) 8.35 µM Q and 3.86 mM CTAB b) 8.35 µM Q and 37.98 mM SDS and c) 8.35 µM Q and 2.78 mM TX-100 aqueous solutions added with different epicathecin concentrations at (28.0 ± 0.1) °C and the pH 7 ± 0.2. The fluorescence intensity variations respect to the value in the absence of Epicatechin (%) are also shown at the right of each spectra family.

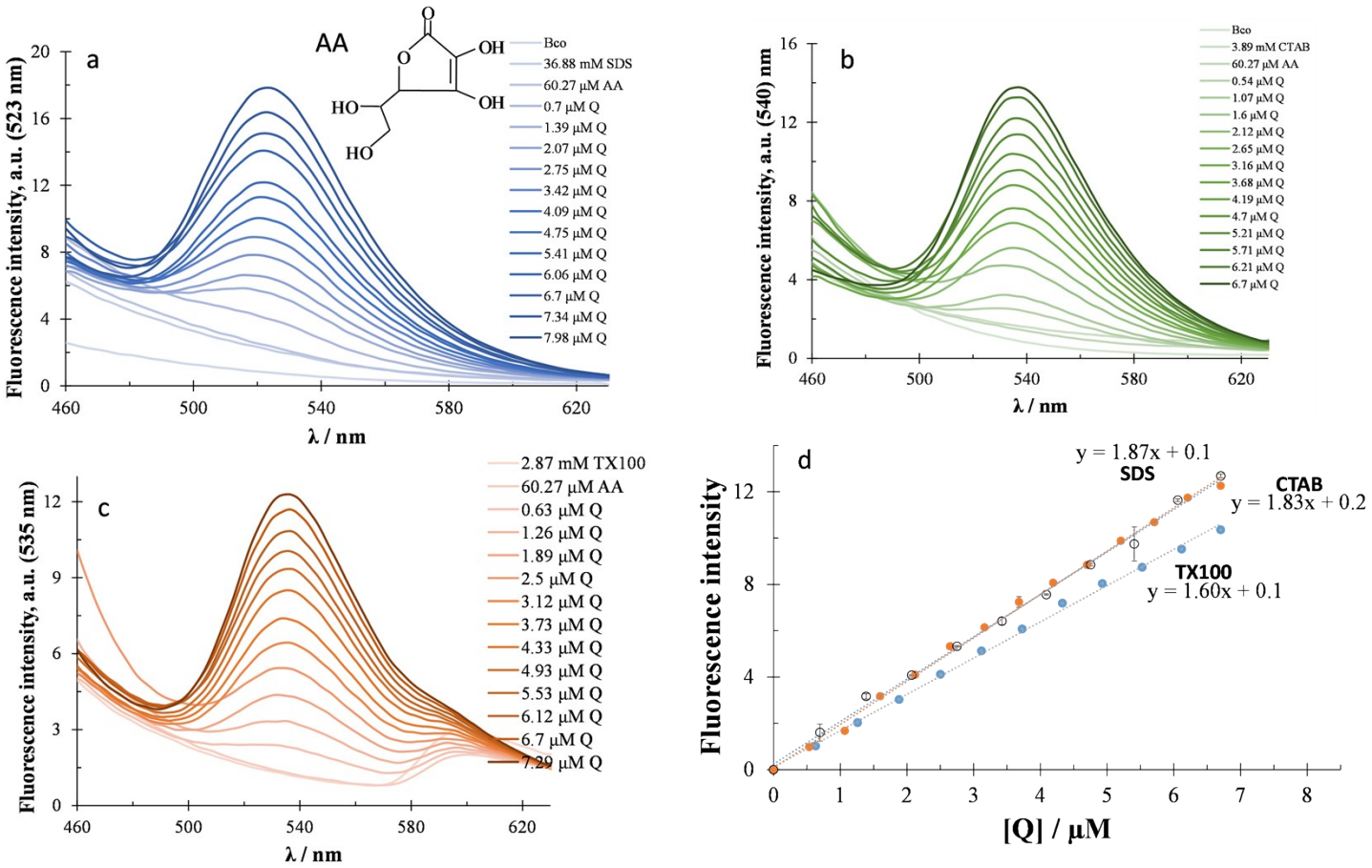

Figure S11. Fluorescence emission spectra, using an excitation wavelength of 350 nm, recorded in a) 60.27 µM ascorbic acid (AA) and 36.88 mM SDS b) 60.27 µM AA and 3.89 mM CTAB and c) 60.27 µM AA and 2.78 mM TX-100 aqueous solutions added with different quercetin concentrations at (28.0 ± 0.1) °C and the pH 7 ± 0.2. d) The respective calibration plots are also shown in d). In these plots, the fluorescence intensity of the corresponding AA and surfactant aqueous solution without quercetin was subtracted.