**Supplementary Materials**

# Novel Benzo[*a*]phenoxazinium Chlorides Functionalized with Sulfonamide Groups as NIR Fluorescent Probes for Vacuole, Endoplasmic Reticulum, and Plasma Membrane Staining

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## 1. Absorption and fluorescence spectra of compounds 3a-f

Absorption and fluorescence spectra of compounds **3a-f** in dry ethanol, acidified ethanol, water and aqueous solutions of pH 3, 5 and 7.4 are shown.

## 1. Absorption and fluorescence spectra of compounds 3a-f

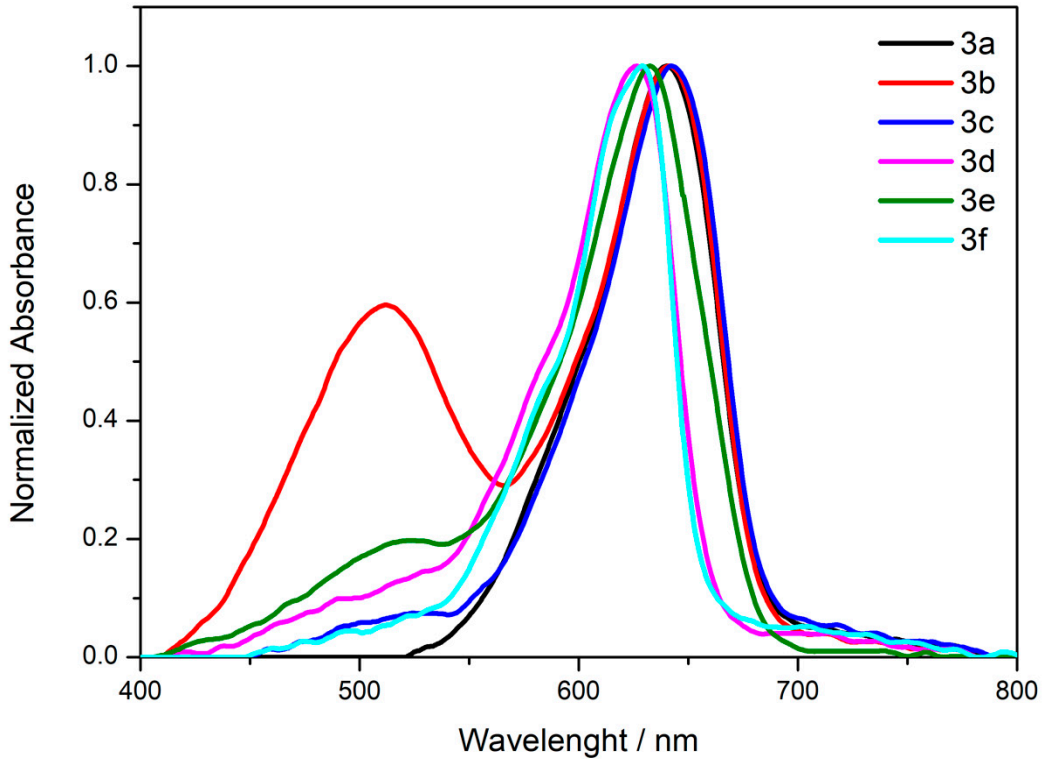



**Figure S1** – Normalized absorption spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in ethanol.

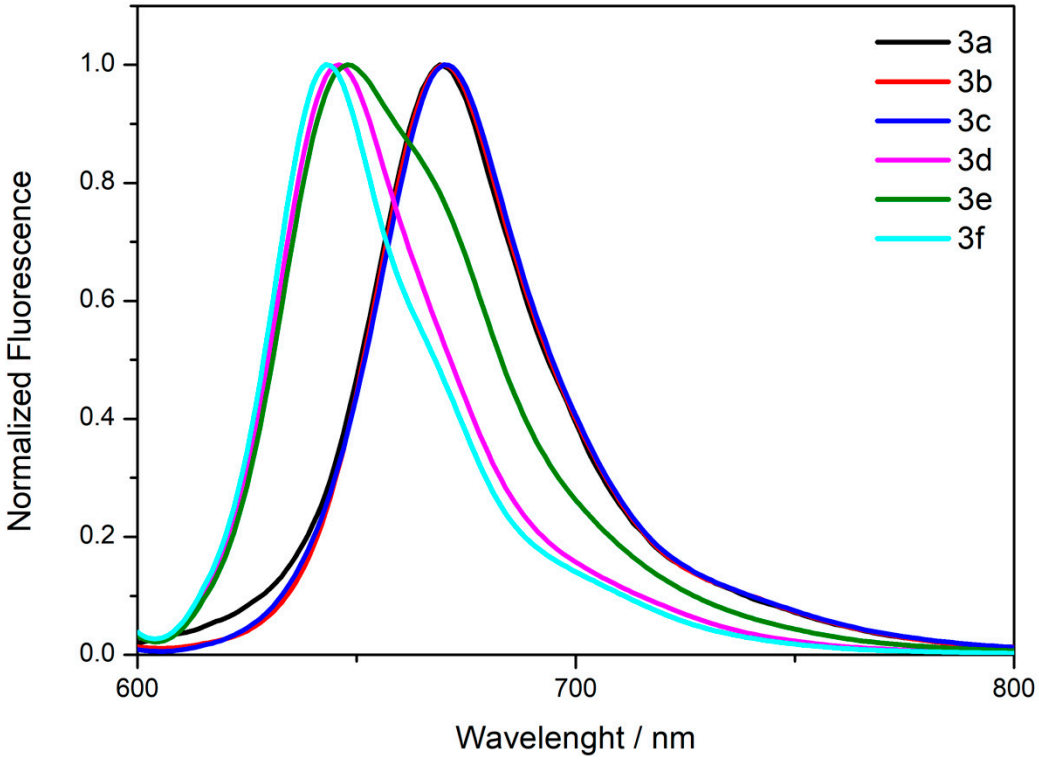



**Figure S2** – Normalized emission spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in ethanol, $\lambda_{exc}$ = 590 nm).

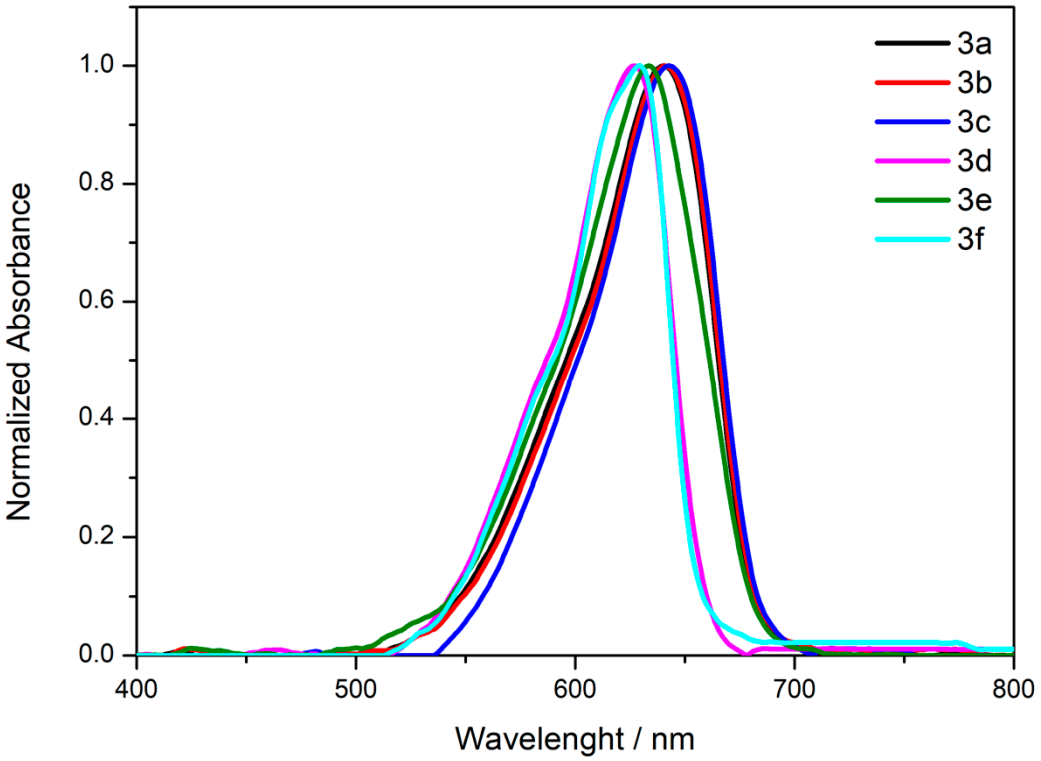



**Figure S3** – Normalized absorption spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in acidified ethanol.

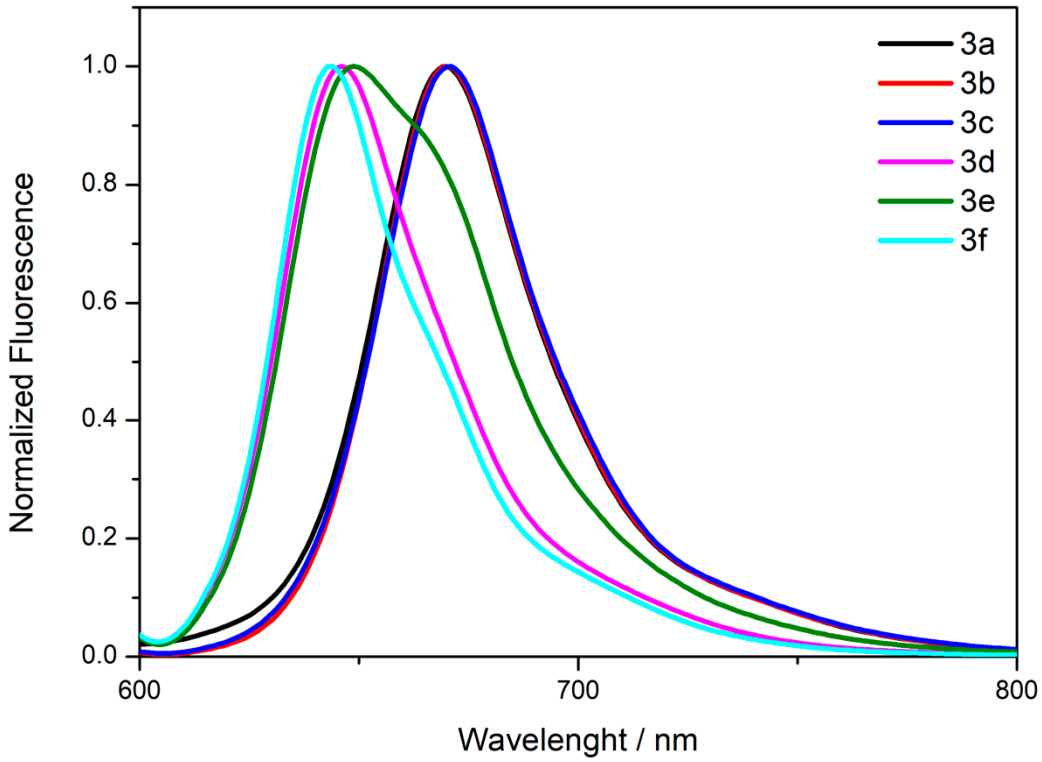



**Figure S4** – Normalized emission spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in acidified ethanol, $\lambda_{exc}$ = 590 nm.

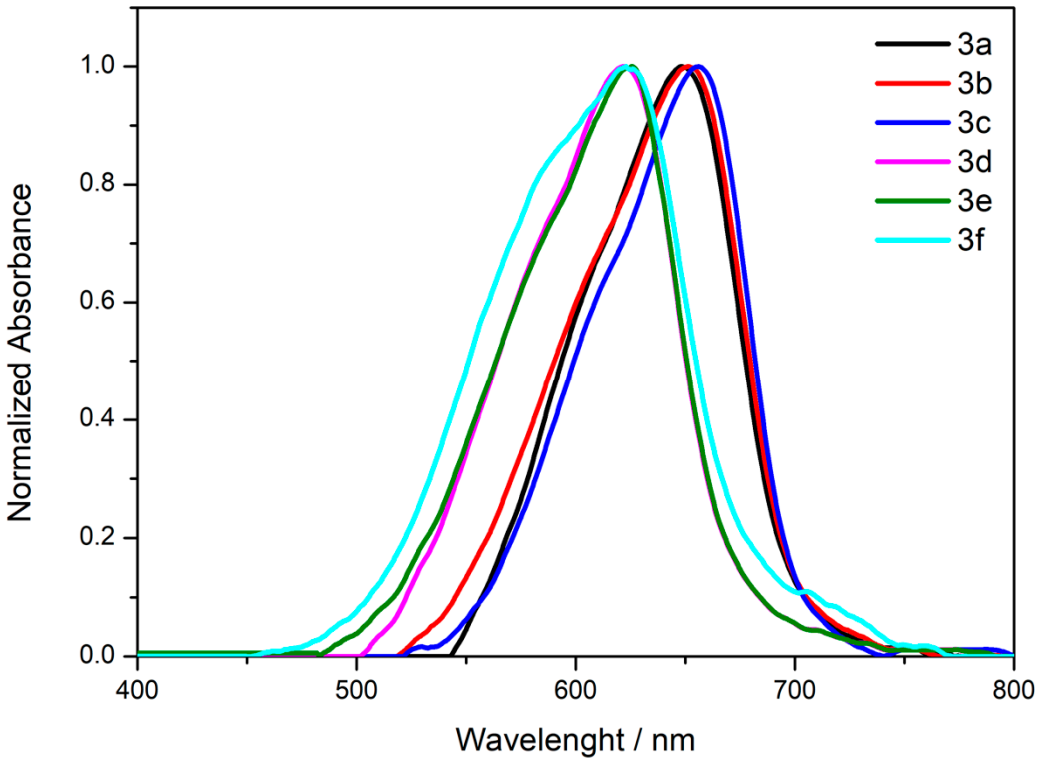



**Figure S5** – Normalized absorption spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in water.

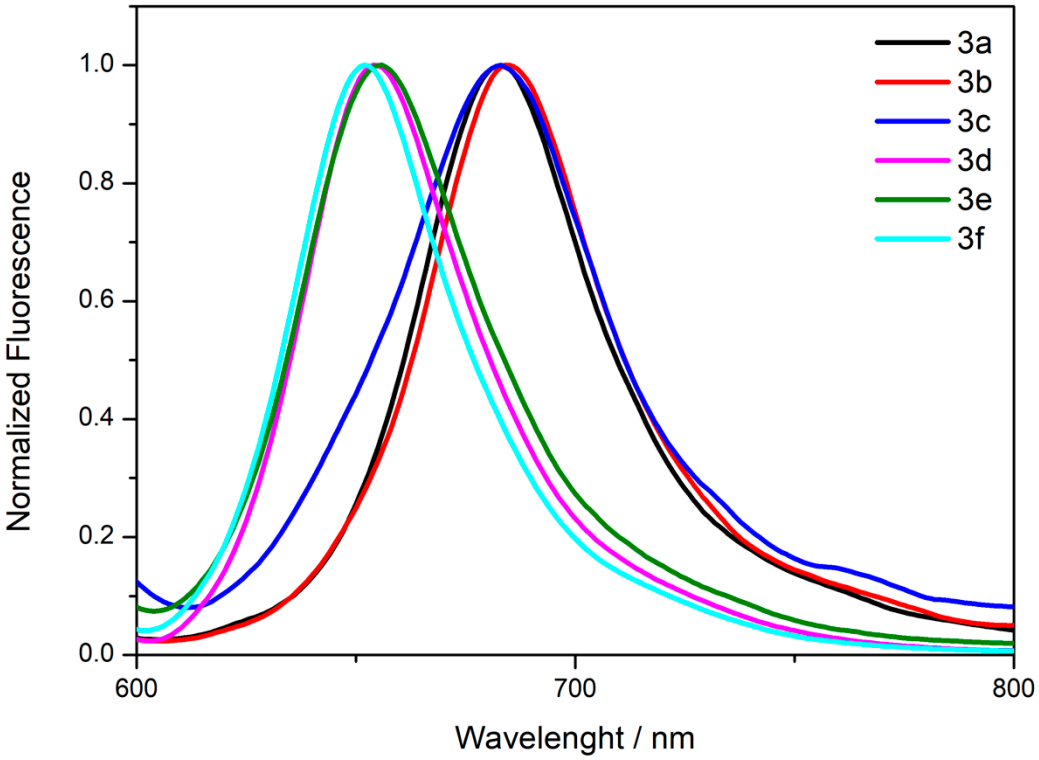



**Figure S6** – Normalized emission spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in water, $\lambda_{exc}$ = 590 nm.

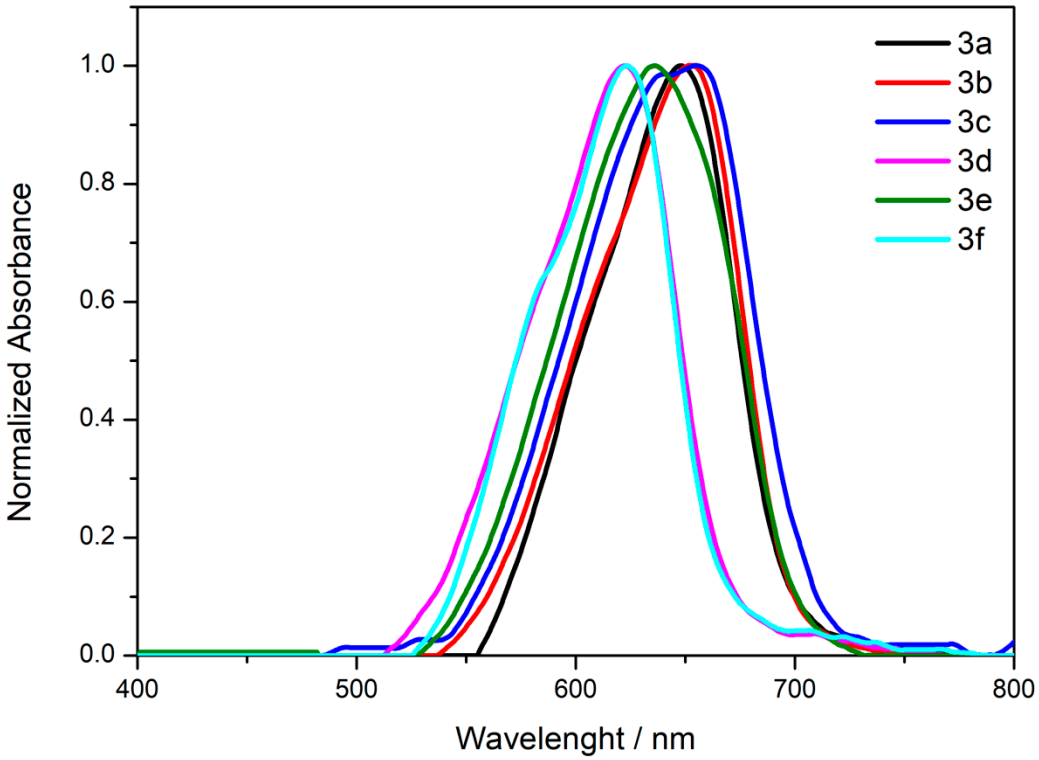



**Figure S7** – Normalized absorption spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in aqueous solution of pH=3.

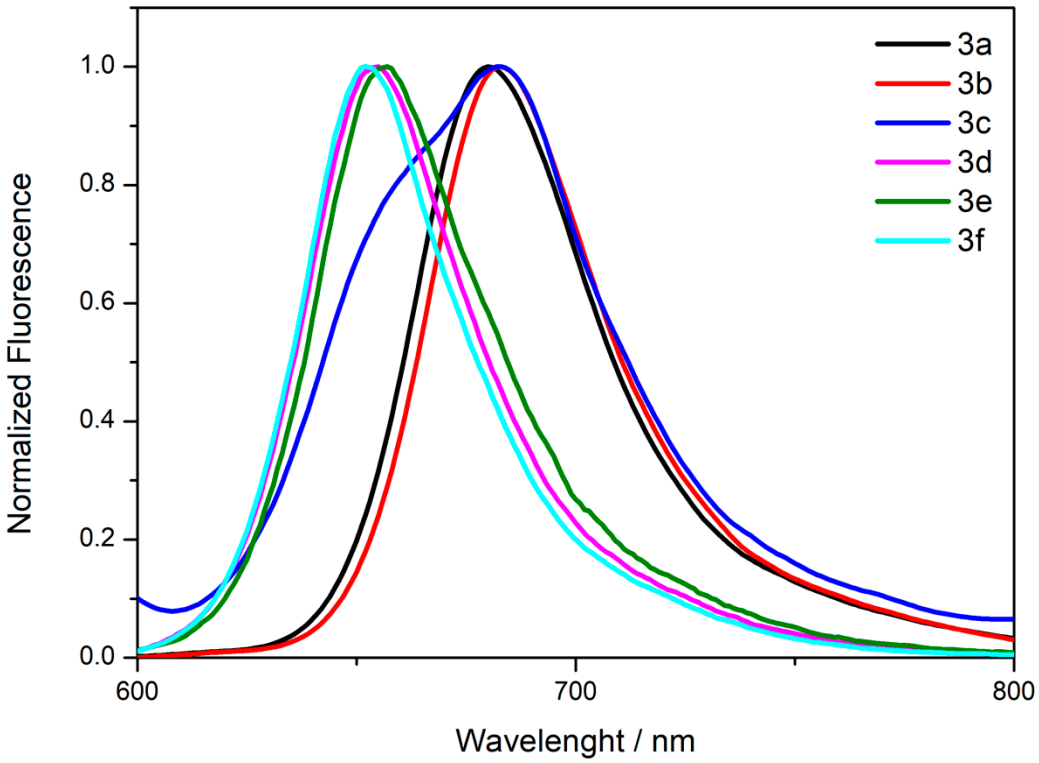



**Figure S8** – Normalized emission spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in aqueous solution of pH=3, $\lambda_{exc}$ = 590 nm.

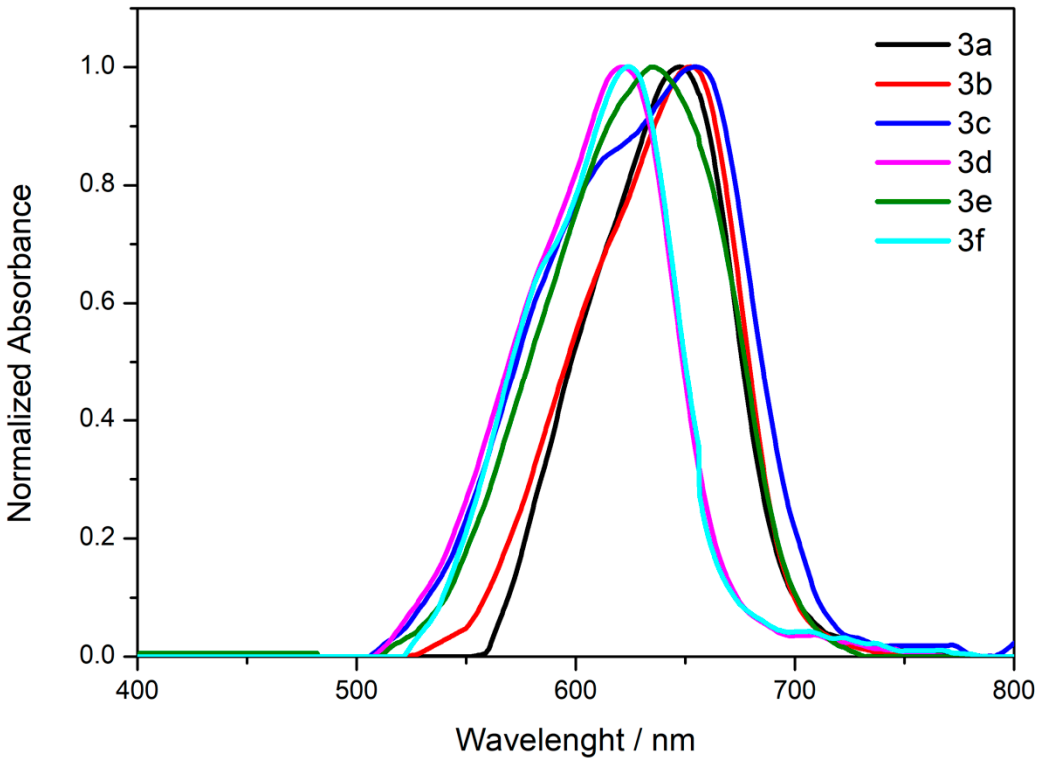



**Figure S9** – Normalized absorption spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in aqueous solution of pH=5.

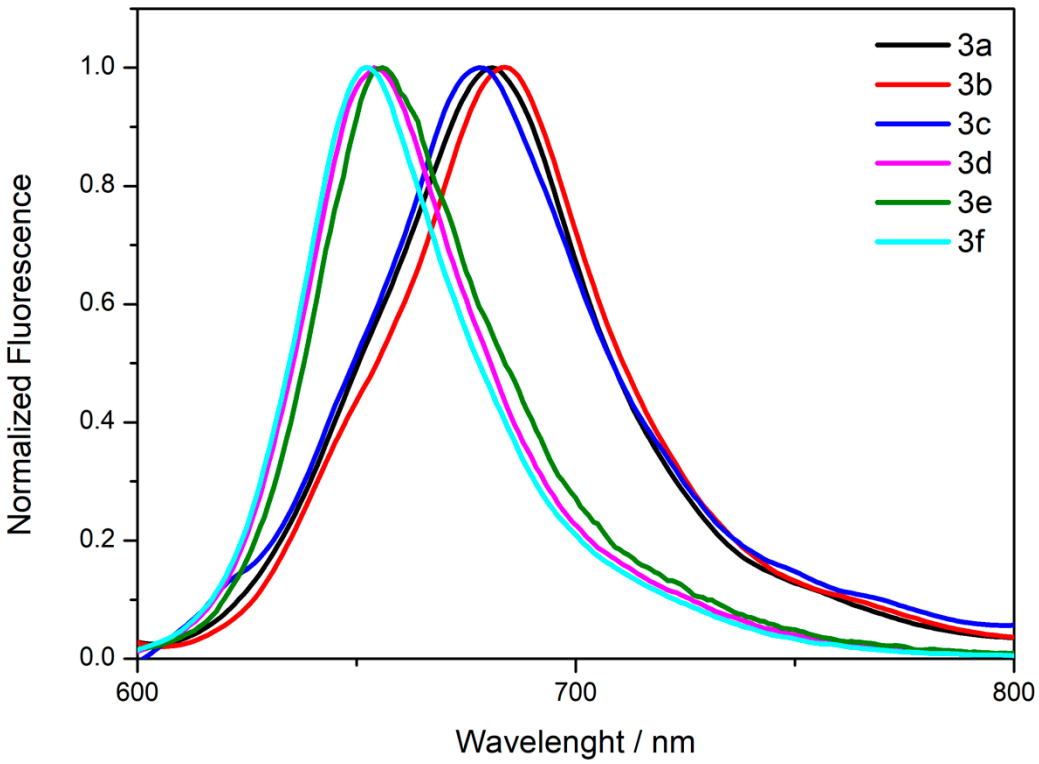



**Figure S10** – Normalized emission spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in aqueous solution of pH=5, $\lambda_{exc}$ = 590 nm.

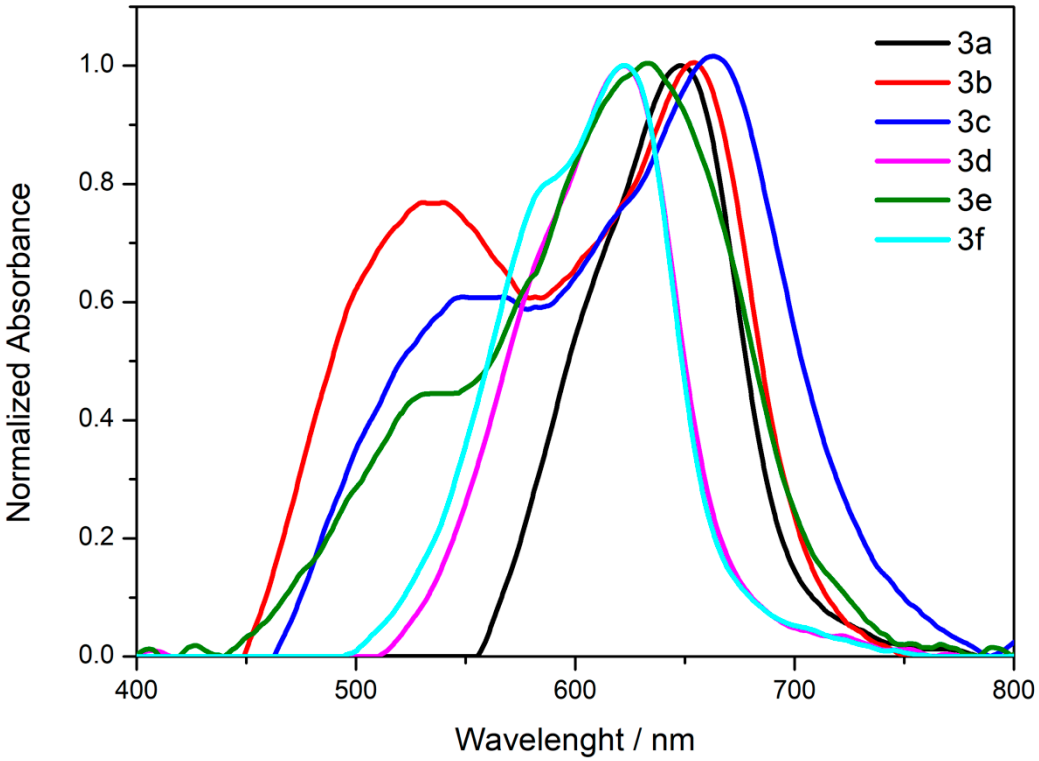



**Figure S11** – Normalized absorption spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in aqueous solution of pH=7.4.

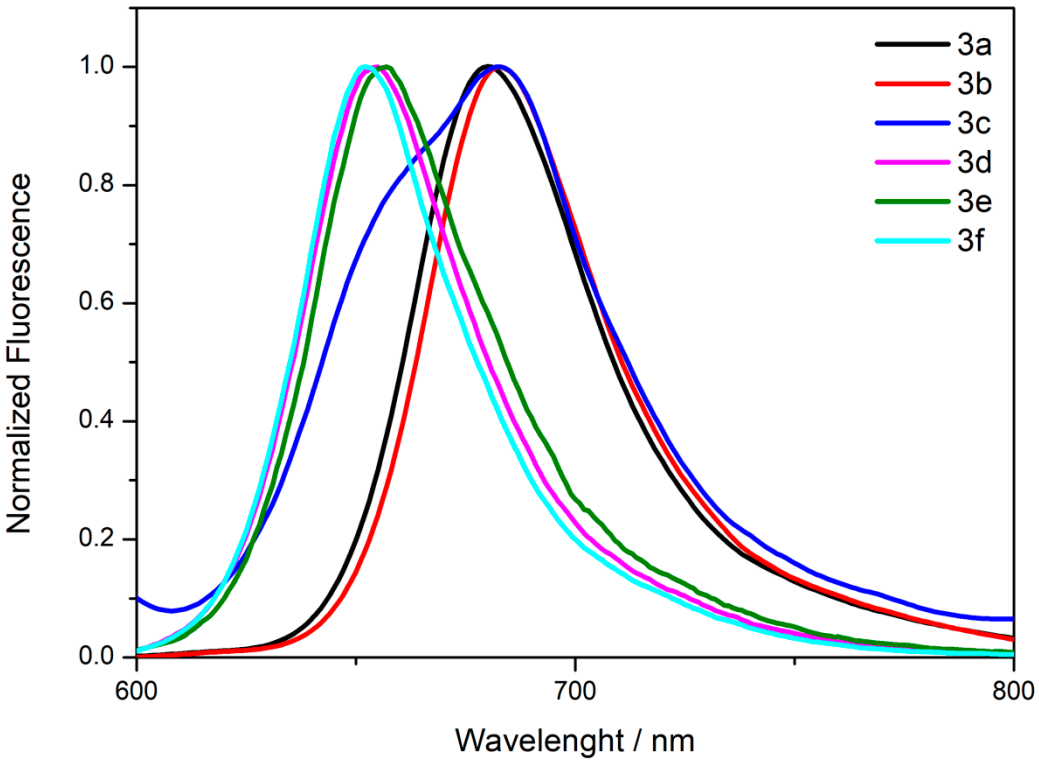



**Figure S12** – Normalized emission spectra of benzo[*a*]phenoxazinium chlorides **3a-f** in aqueous solution of pH=7.4, $\lambda_{exc}$ = 590 nm.