Supplementary material

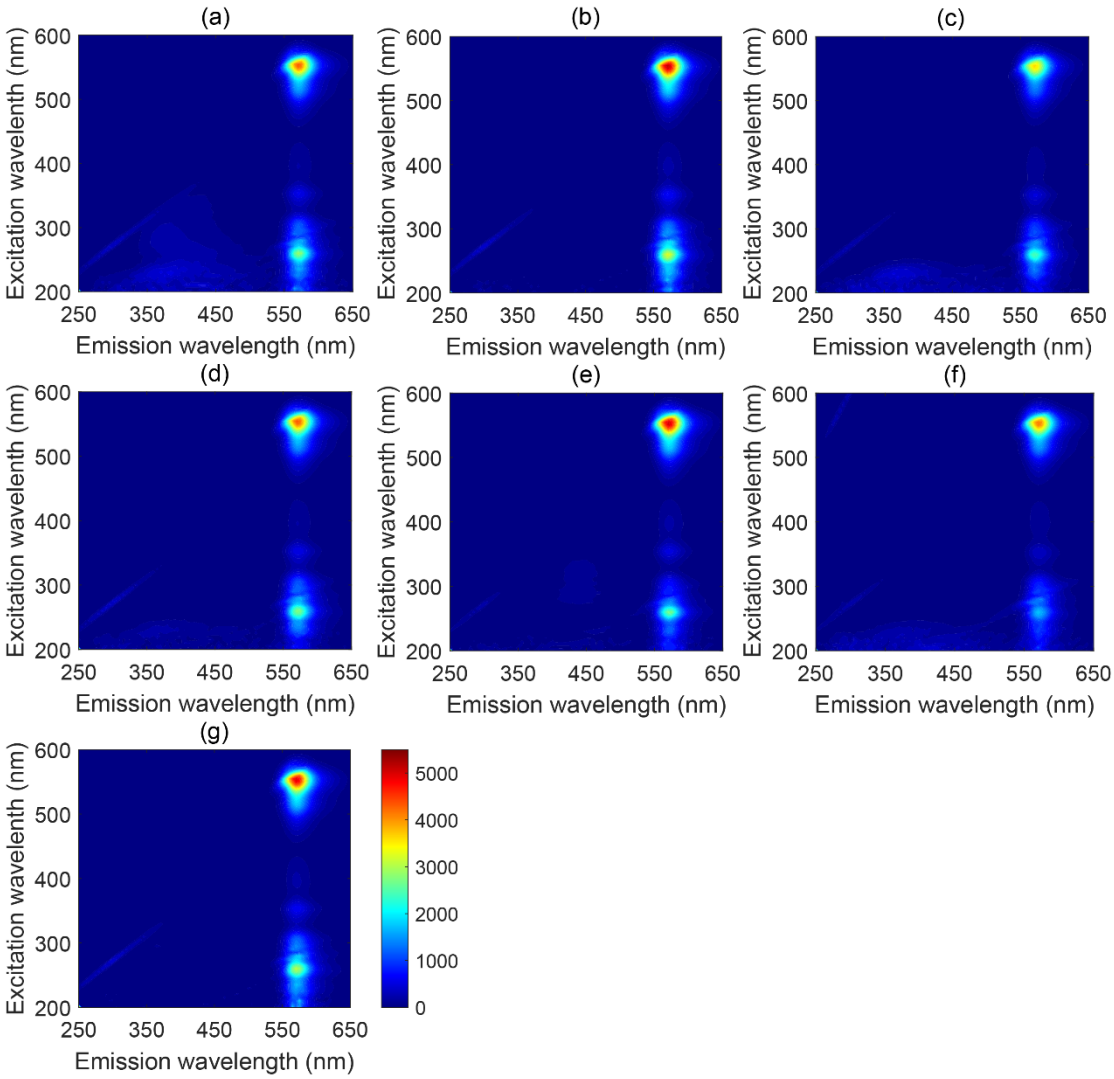

Figure S1. EEM fluorescence after removing scattering: (a) RB-L-Lysine; (b) RB-DL-Homocysteine; (c) RB-Cu^{2+}; (d) RB-Ca^{2+}; (e) RB-Chlorogenic acid; (f) RB-Kaempferol; (g) RB.

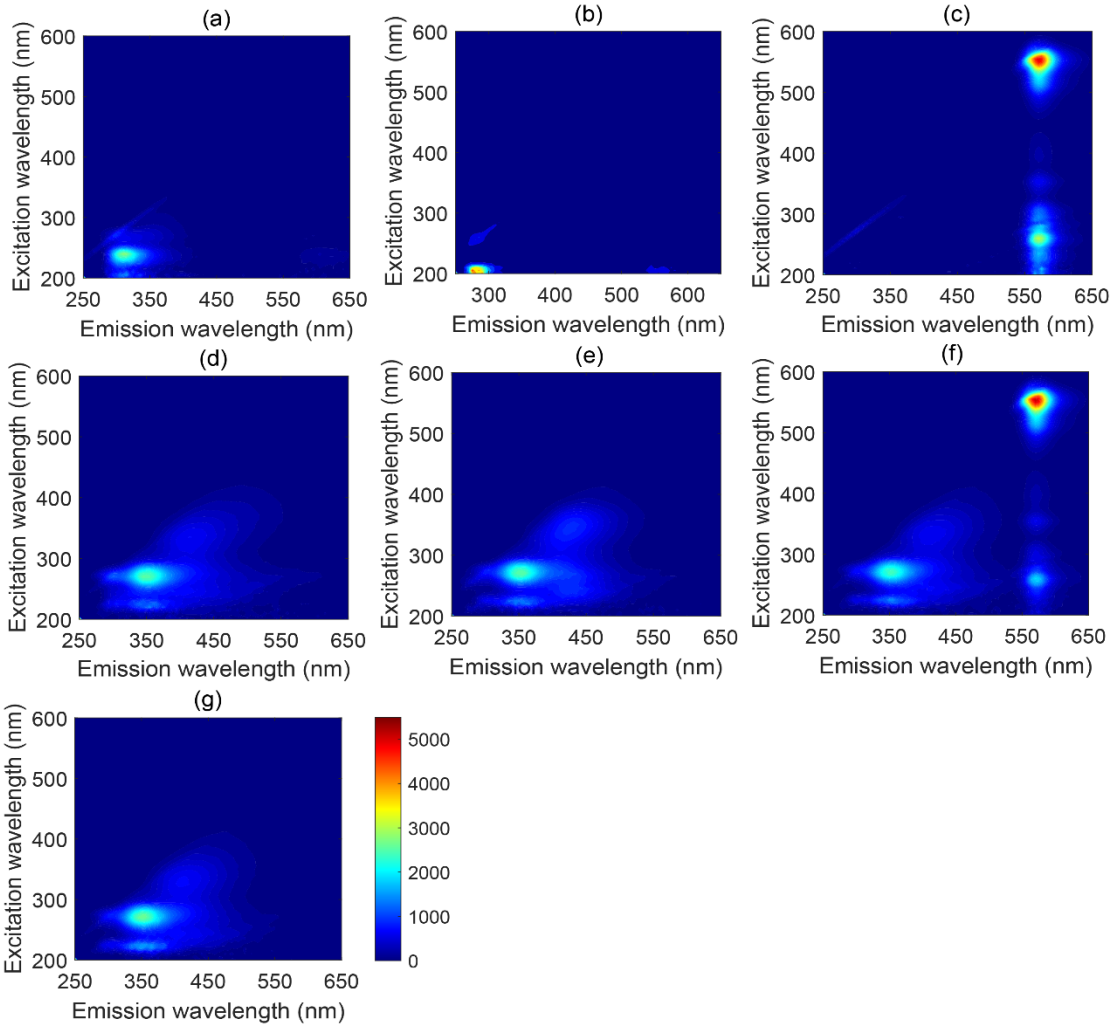

Figure S2. EEM fluorescence after removing scattering: (a) DPBA; (b) OPA; (c) RB; (d) DPBA-lily; (e) OPA-lily; (f) RB-lily; (g) pure lily.

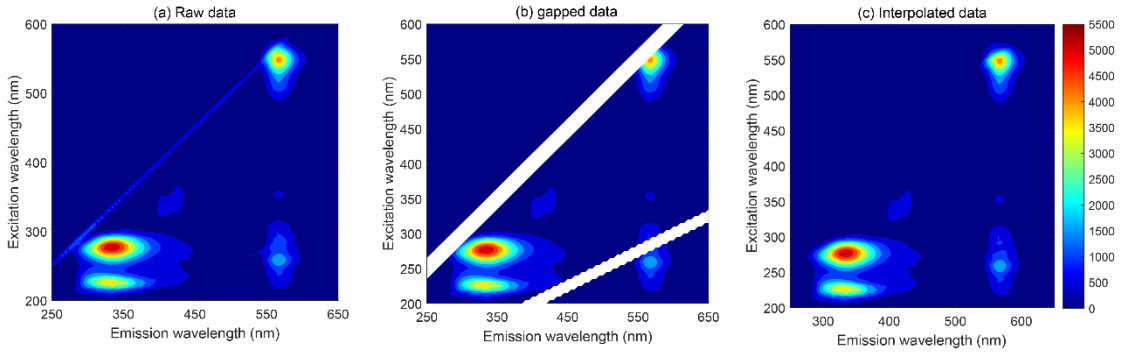

Figure S3. The elimination of non-bilinear factor (Rayleigh scattering) for the EEM fluorescence data of fluorophores-lily: (a) raw data with visible Rayleigh scattering; (b) gapped data with scattering being removed in the regions; (c) repaired data fitted by an interpolation method.

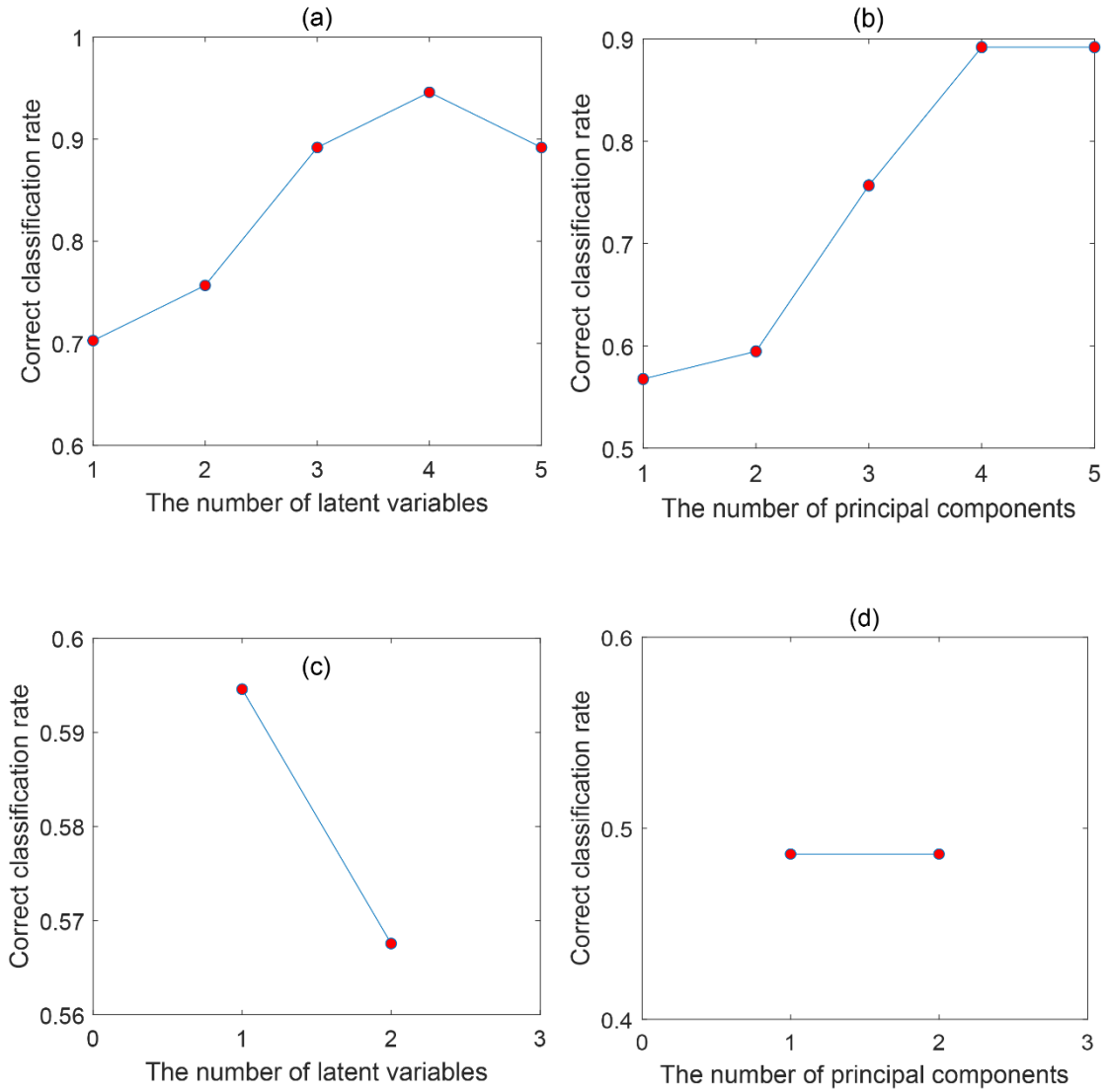

Figure S4. The number of latent variables (*LVs*) for PLS-DA and the number of principal components (*PCs*) for PCA-LDA were optimized according to the best correct classification rates (CCRs) obtained by 10-fold cross-validation: (a) Fluorophore-lily-PLS-DA; (b) Fluorophore-lily -PCA-LDA; (c) Lily-PLS-DA; (d) Lily-PCA-LDA.

Table S1. The intensities of pure RB and RB added with different chemical components at different excitation/emission wavelength.

chemical component	Concentration (ug/ml)	555/565 nm	260/565 nm
RB	4.6	4415	2804
RB-L-Lysine	4.6-7.3	3877	2607
RB-DL-Homocysteine	4.6-6.75	4561	2555
RB-Cu^{2+}	4.6-0.1	3272	2314
RB-Ca^{2+}	4.6-0.1	3822	2500
RB-Chlorogenic acid	4.6-11.15	4477	2387
RB-Kaempferol	4.6-12.5	3786	1592