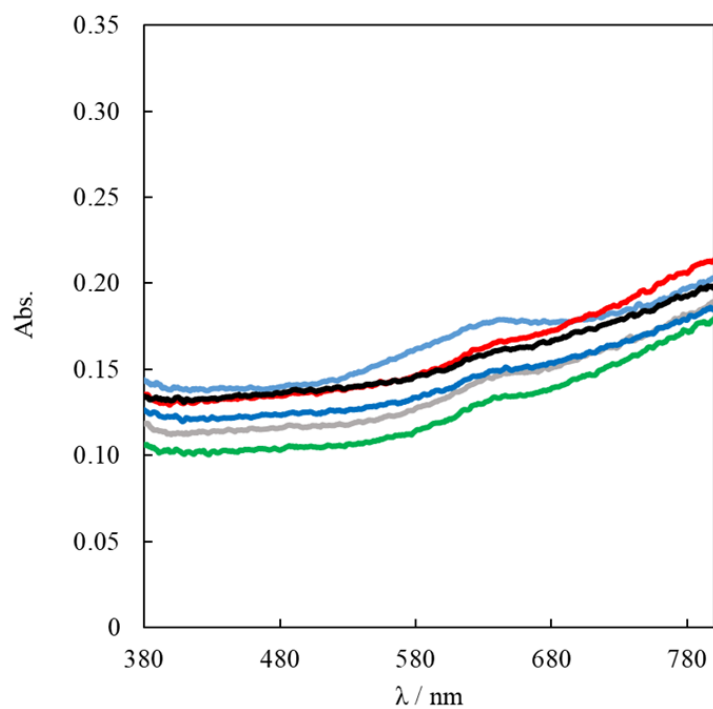
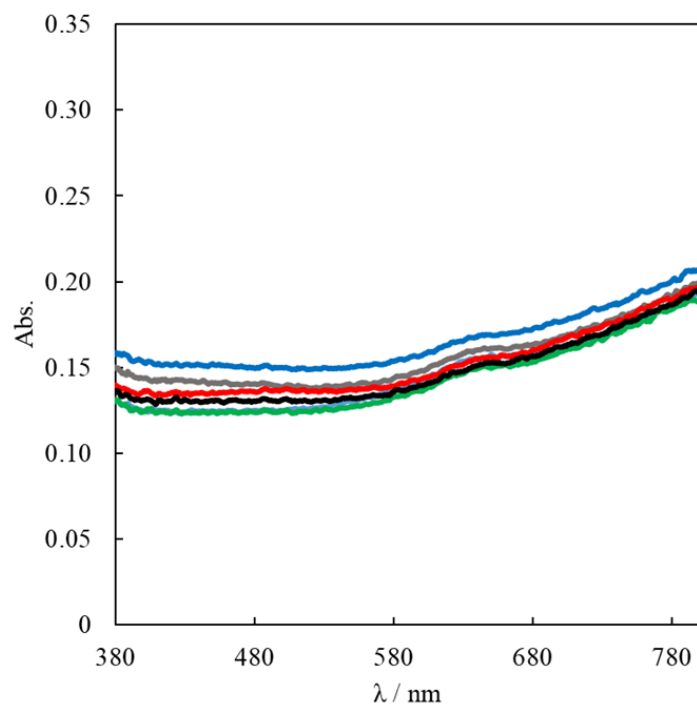


Supplementary data

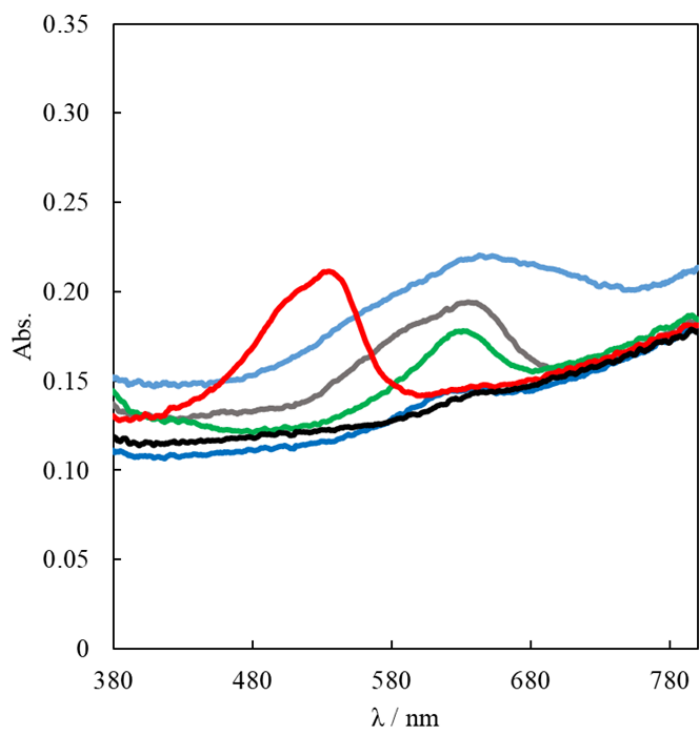
(A)



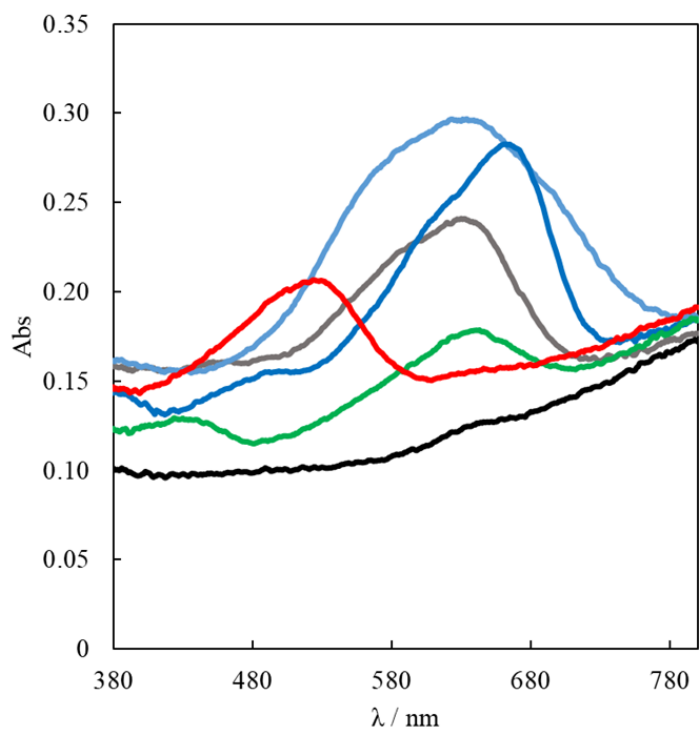
(B)



(C)



(D)



(E)

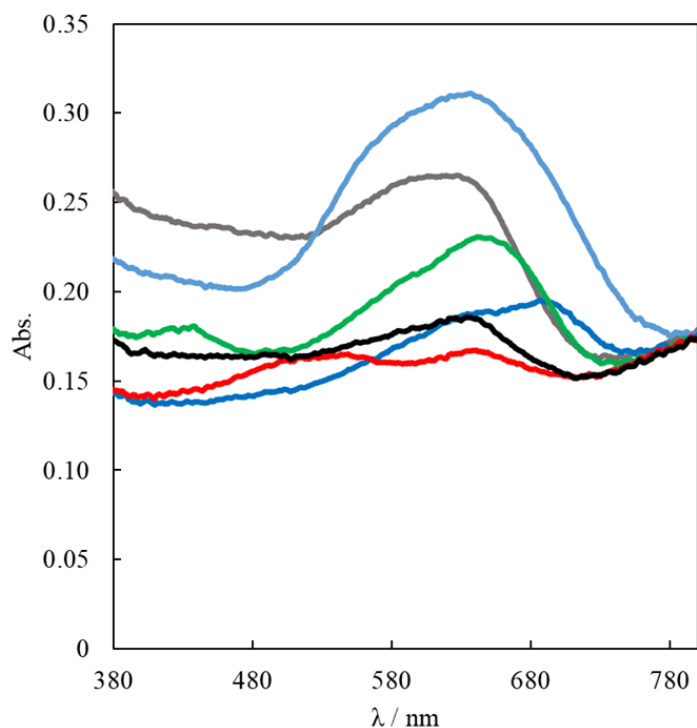


Figure S1. Reflective spectra of dyes staining the membranes measured using the integrating spherical spectrophotometer. The membranes were excised as 5 mm × 5 mm, and then soaked in 0.2 mol/L phosphate buffer (pH 6.8) of the dyes. Aqueous solution-stained membranes were prepared as describe in the Materials and Methods section. Membranes are (A) pPTFE, (B) iPTFE, (C) JHWP04700, (D) NCM, (E) PCM, dyes are (red) SF, (light blue) CBB, (dark blue) MB, (green) MG, (gray) AB, (black) 0.2 mol/L phosphate buffer (pH 6.8). SF, CBB, MB, MG, and AB are abbreviations for safranin, Coomassie brilliant blue R-250, methylene blue, malachite green oxalate, and amide black 10B, respectively.

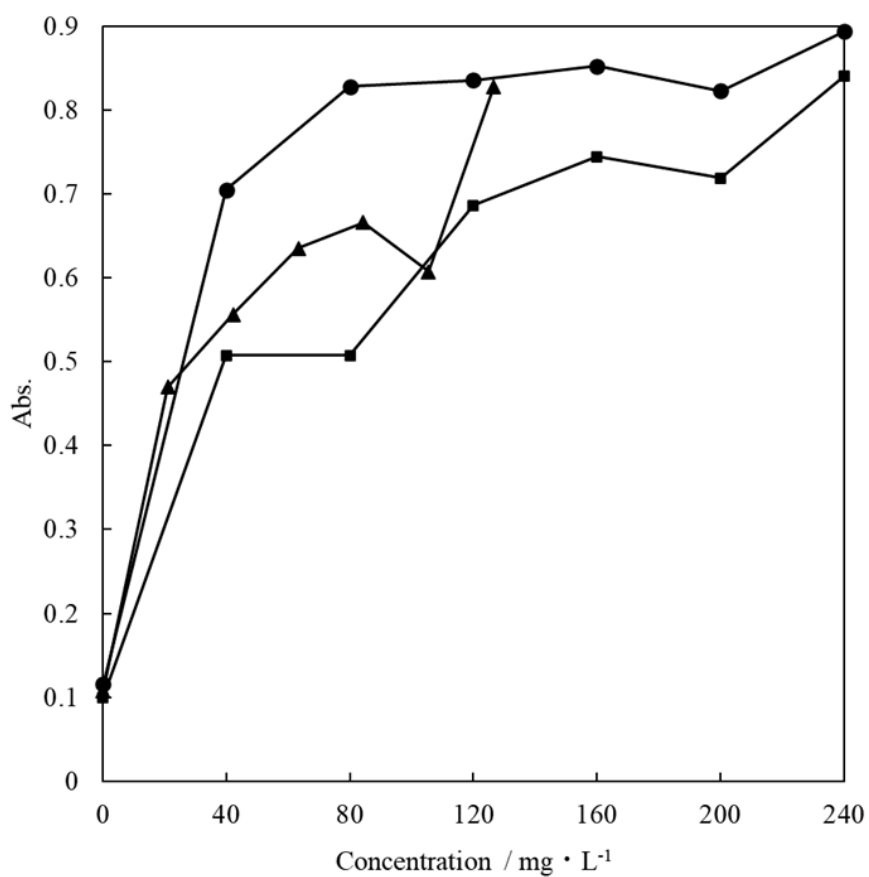


Figure S2. Plain saturation curve for MG (measured at 622 nm, represented by closed circles), R6G (527 nm, closed triangles), and FL (441 nm, closed squares). The evaporative dried membranes were prepared as described in the Materials and Methods section.

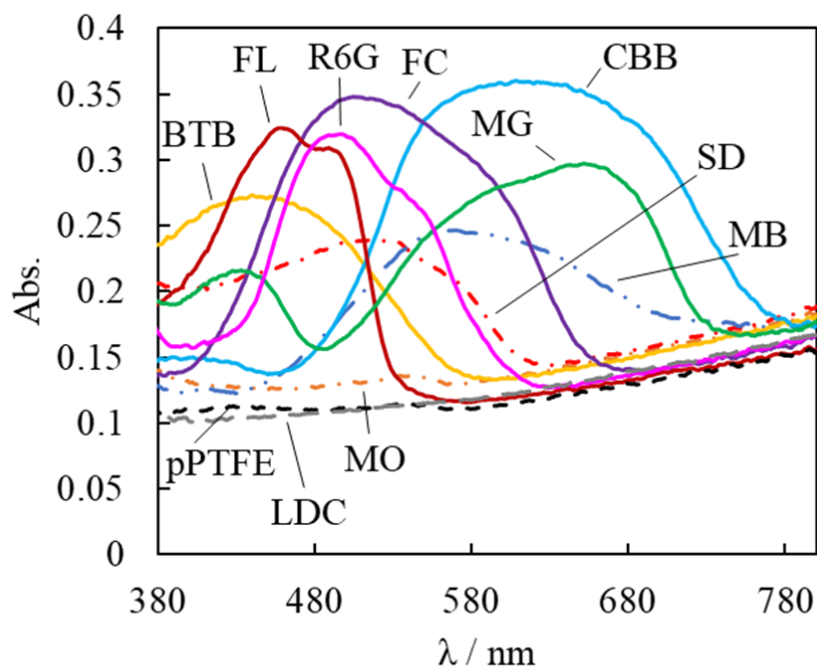
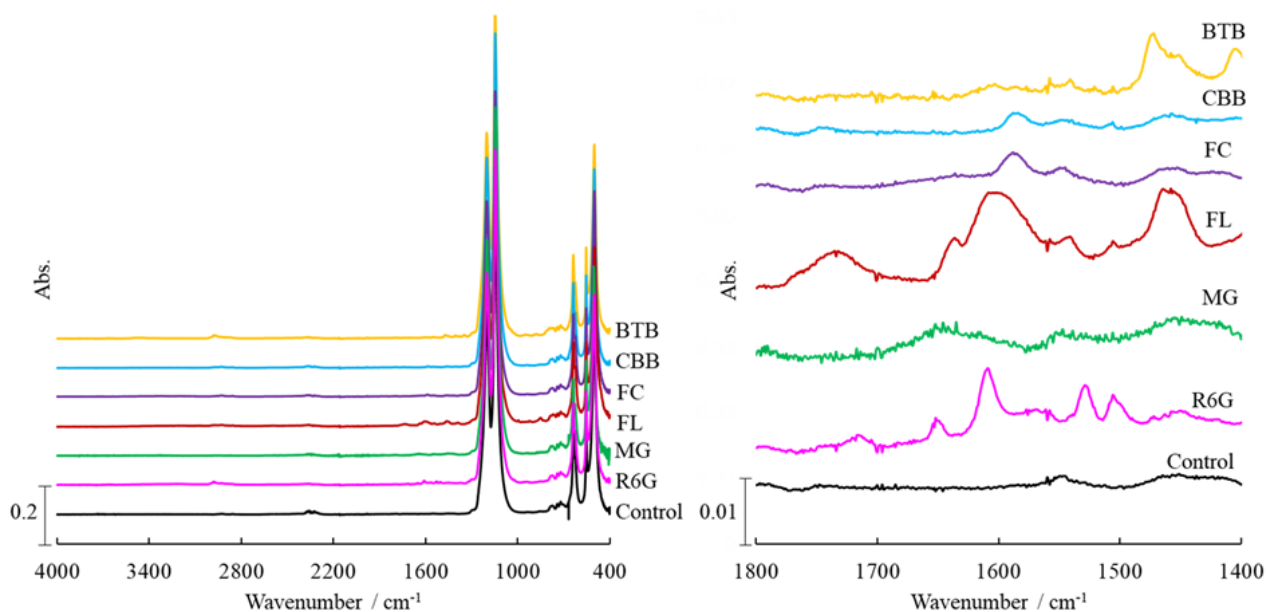


Figure S3. Reflective spectra of TPM derivatives staining the porous PTFE membranes and the LDC adsorbed porous PTFE measured using the integrating spherical spectrophotometer. The porous PTFE membranes were excised as  $5 \text{ mm} \times 5 \text{ mm}$ , and then were soaked into solutions using Appropriate-solvent of the TPM derivatives. Appropriate-solvent stained membranes were prepared as describe in Materials and Methods section. MO, SD, MB, BTB, CBB, FC, FL, MG, R6G, and LDC are abbreviations for methyl orange, Sudan III, methylene blue, bromothymol blue, Coomassie brilliant blue R-250, fuchsine, fluorescein, malachite green oxalate, rhodamine 6G, and lidocaine, respectively. Control represents the reflective spectrum of non-stained membrane.

(A)



(B)

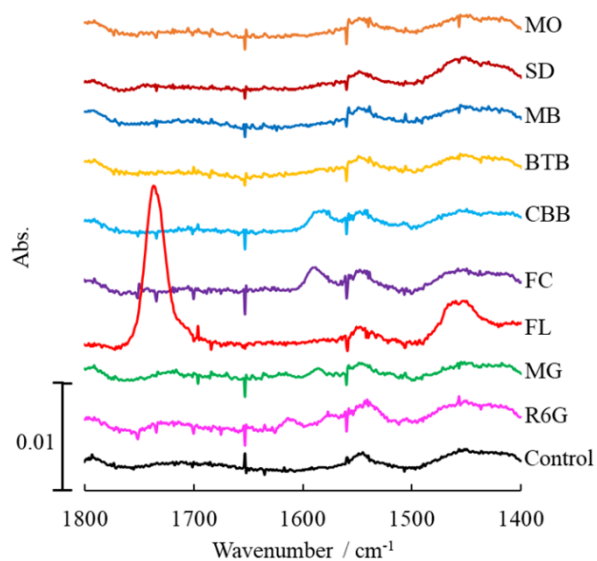


Figure S4. ATR-FTIR spectra of dyes adsorbed on the porous PTFE membrane. (A) Evaporative dried membranes, which were prepared as describe in Materials and Methods section. (B) Appropriate-solvent stained membranes, which were prepared as describe in Materials and Methods section. MO, SD, MB, BTB, CBB, FC, FL, MG, and R6G are abbreviation for methyl orange, Sudan III, methylene blue, bromothymol blue, coomassie brilliant blue R-250, fuchsine, fluorescein, malachite green oxalate, and rhodamine 6G, respectively. Control represents the reflective spectrum of non-stained membrane.