

## Supporting Information

### Fluorescence Sensor Array for Identification of Foodborne Pathogens

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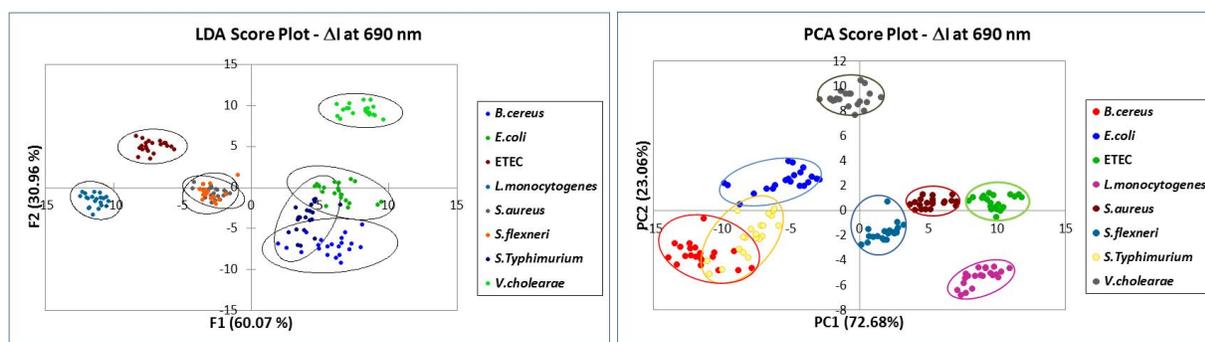
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*Vibrio cholera*, *Shigella flexneri*, *Bacillus cereus* ATCC 14579, *Listeria monocytogenes*, *Salmonella typhimurium* ATCC 11331, *Staphylococcus aureus* ATCC 25923, non-enterotoxigenic *Escherichia coli* ATCC 25922 were kindly provided by Associate Professor Chanpen Wiwat, Faculty of Pharmacy, Mahidol University, Thailand. Enterotoxigenic *Escherichia coli* 290 (ETEC) was kindly provided by Assistant Professor Potjane Srimanote, Faculty of Allied Health Science, Thammasat University, Thailand.

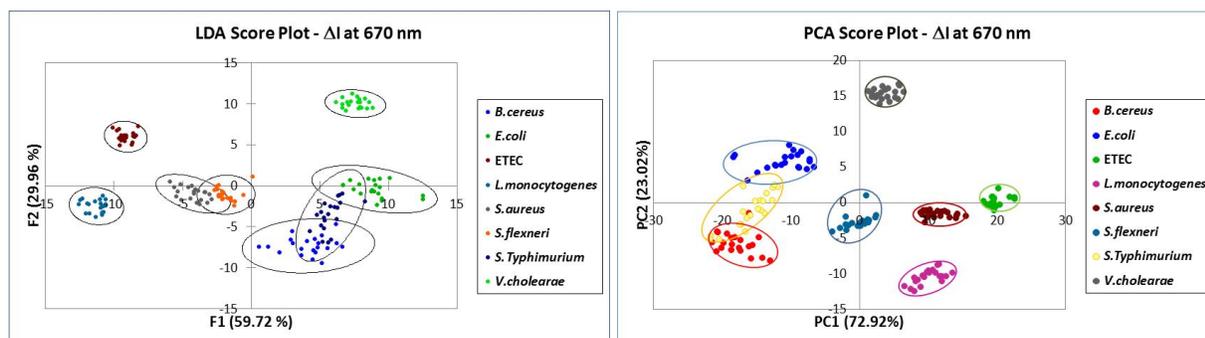
**Table S1.** Pathogenic microorganisms responsible for foodborne illness<sup>4,7-9</sup>

Microorganism	Gram	Shape	Food Sources	Predominant Symptoms
<i>Vibrio cholerae</i>	-	Curved rod	Marine foods and environmental waters	Abdominal discomfort and diarrhea Vomiting also occurs
<i>Shigella flexneri</i>	-	Rod	Salads (potato, tuna, shrimp, macaroni, and chicken), milk and dairy products, and poultry	Abdominal pain, cramps, diarrhea, fever, vomiting, blood, pus, or mucus in stools, tenesmus (straining during bowel movements).
<i>Bacillus cereus</i>	+	Rod	Meats, milk, vegetables, fish, rice, pasta, and cheese, stews, gravies, vanilla sauce.	Vomiting, abdominal cramps, diarrhea, nausea.
<i>Listeria monocytogenes</i>	+	Rod	Soft cheese, raw milk, improperly processed ice cream, raw leafy vegetables; ready-to-eat deli meats, raw meat and poultry	Fever, muscle aches, and nausea or diarrhea. Pregnant women may have mild flu-like illness, and infection can lead to premature delivery or stillbirth. Elderly and immunocompromised patients may have bacteremia

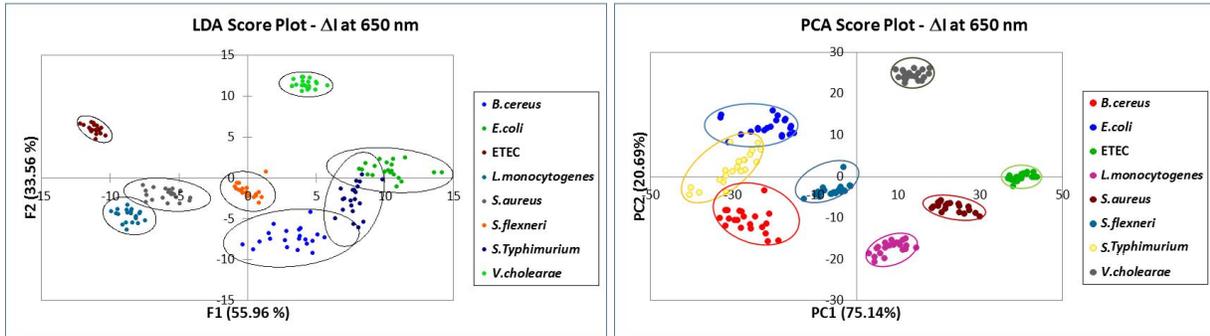
				or meningitis.
<i>Salmonella Typhimurium</i>	-	Rod	Contaminated egg, poultry, meat, unpasteurized milk, dairy foods and fruit juice, raw fruits and vegetables	Fever, headache, shivering, loss of appetite, malaise, constipation, and muscular pain
<i>Staphylococcus aureus</i>	+	Round	Raw milk, cheese, meat and meat products, salads, cream-filled bakery products and dairy products	Nausea, vomiting, retching, diarrhea, abdominal pain, prostration
Enterotoxigenic <i>Escherichia coli</i> (ETEC)	-	Rod	Contaminated water and food in developing countries	Diarrhea among children and travelers in developing countries
<i>Escherichia coli</i>	-	Rod	Food or water contaminated with human feces	Harmless (ATCC25922 stain used)



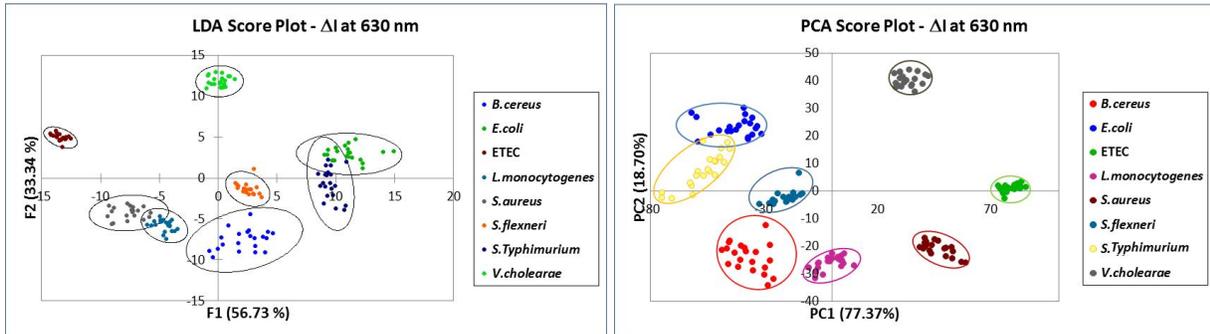
**Fig. S1.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 690 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



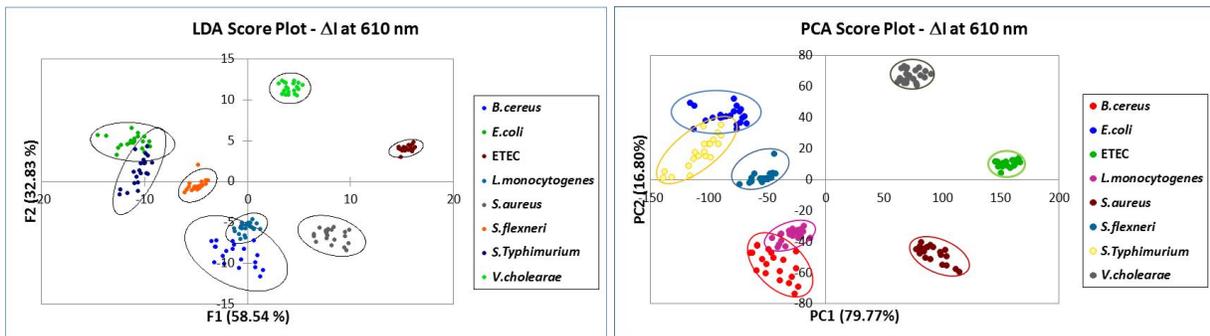
**Fig. S2.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 670 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



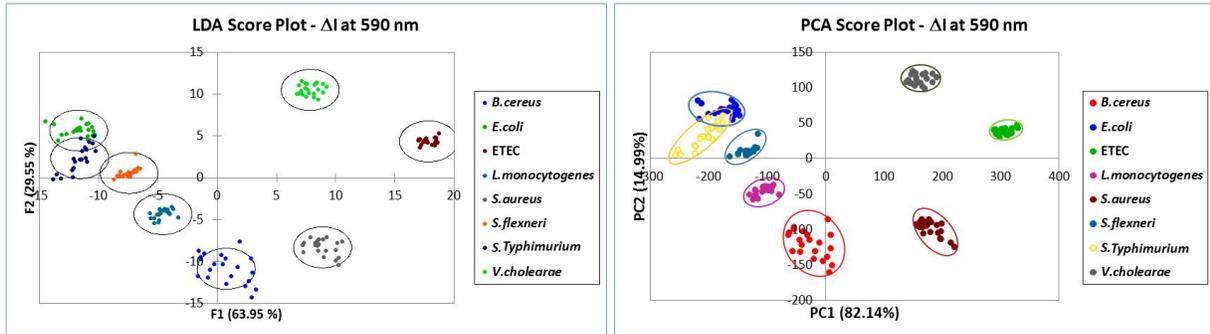
**Fig. S3.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 650 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



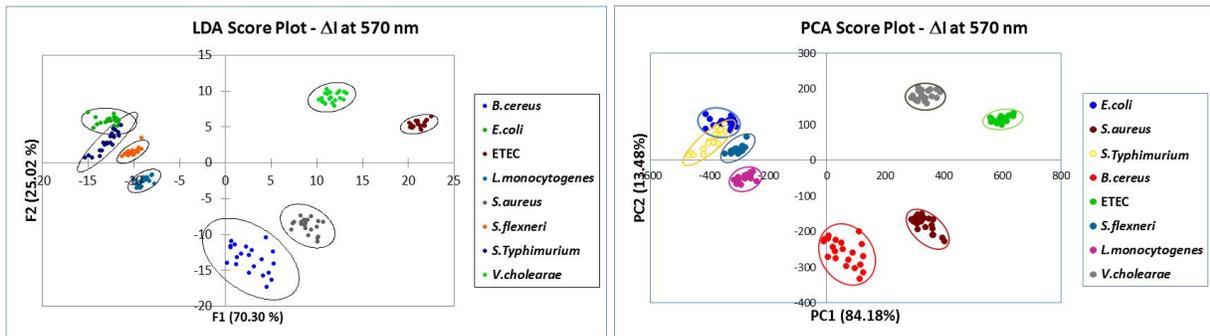
**Fig. S4.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 630 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



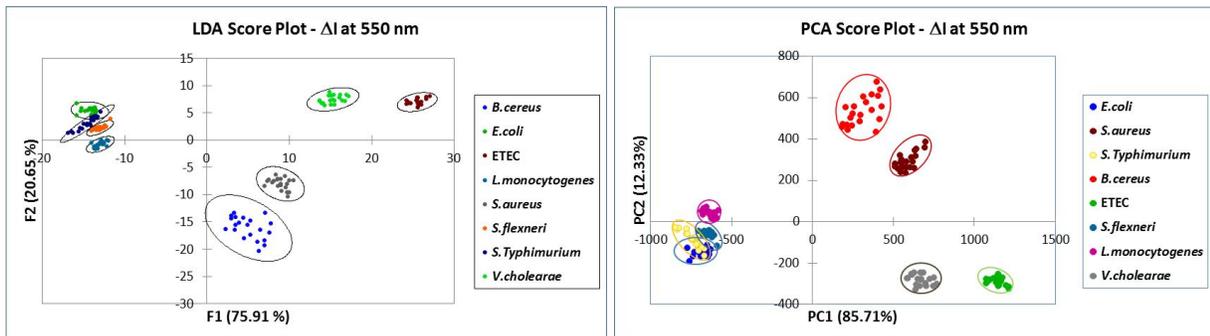
**Fig. S5.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 610 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



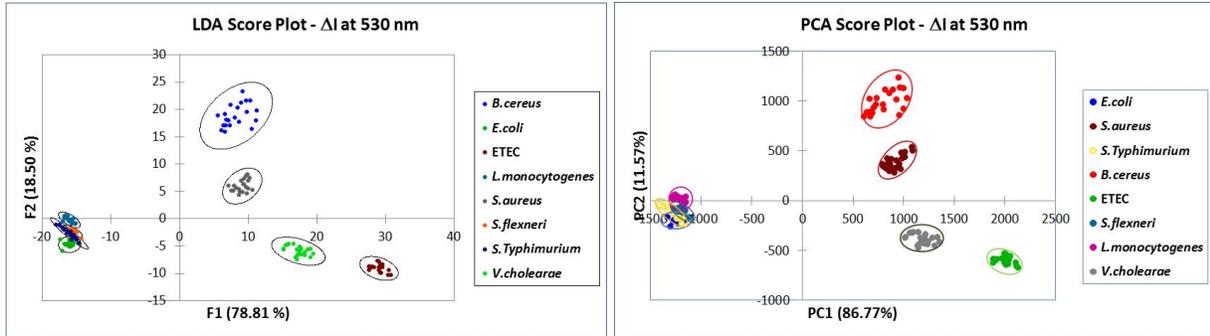
**Fig. S6.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 590 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



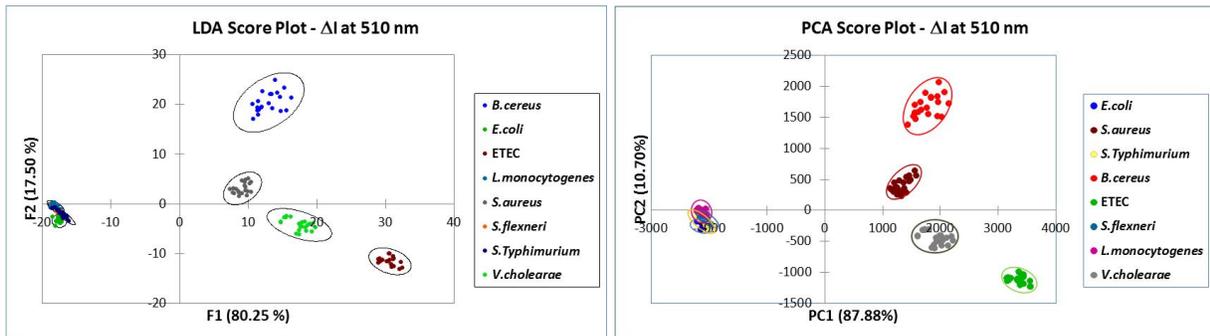
**Fig. S7.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 570 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



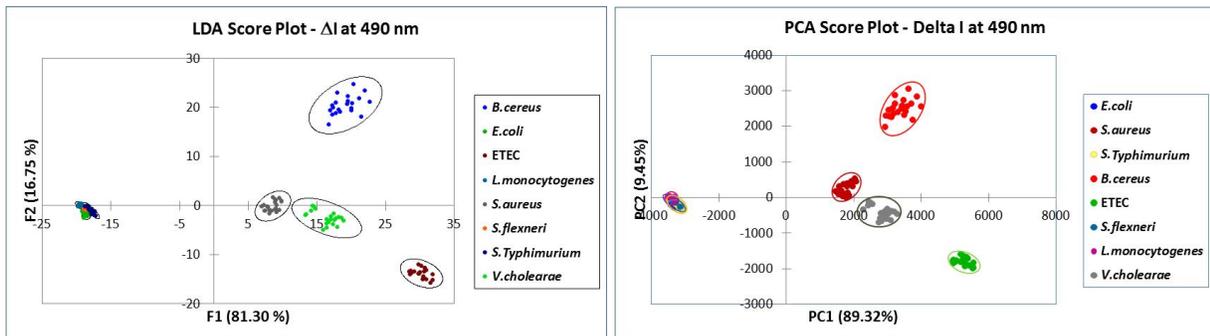
**Fig. S8.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 550 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



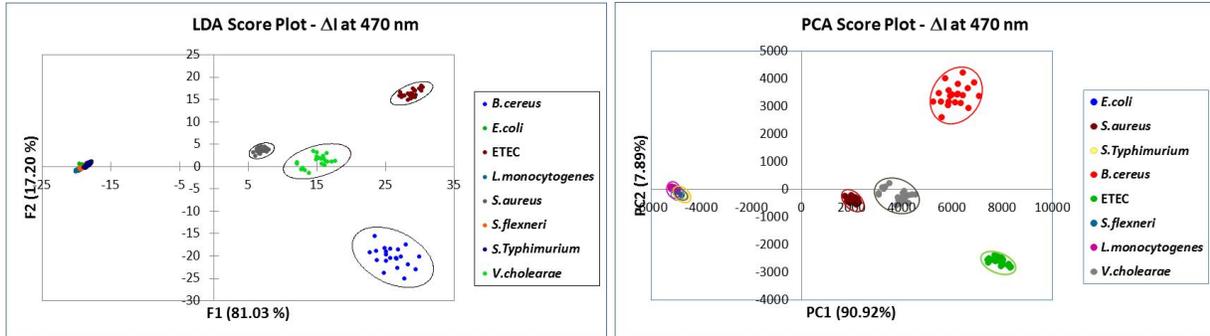
**Fig. S9.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 530 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



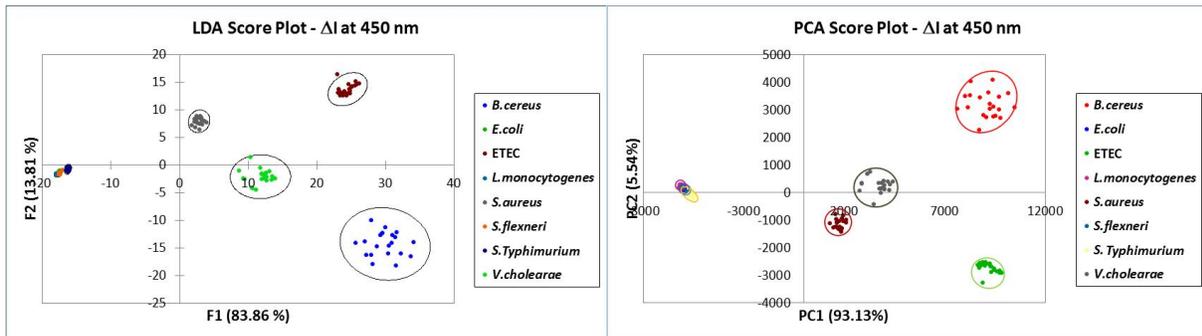
**Fig. S10.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 510 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



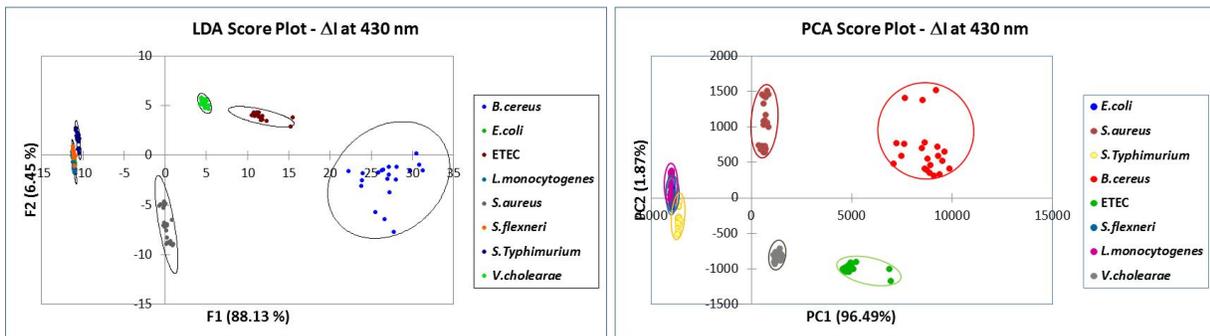
**Fig. S11.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 490 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



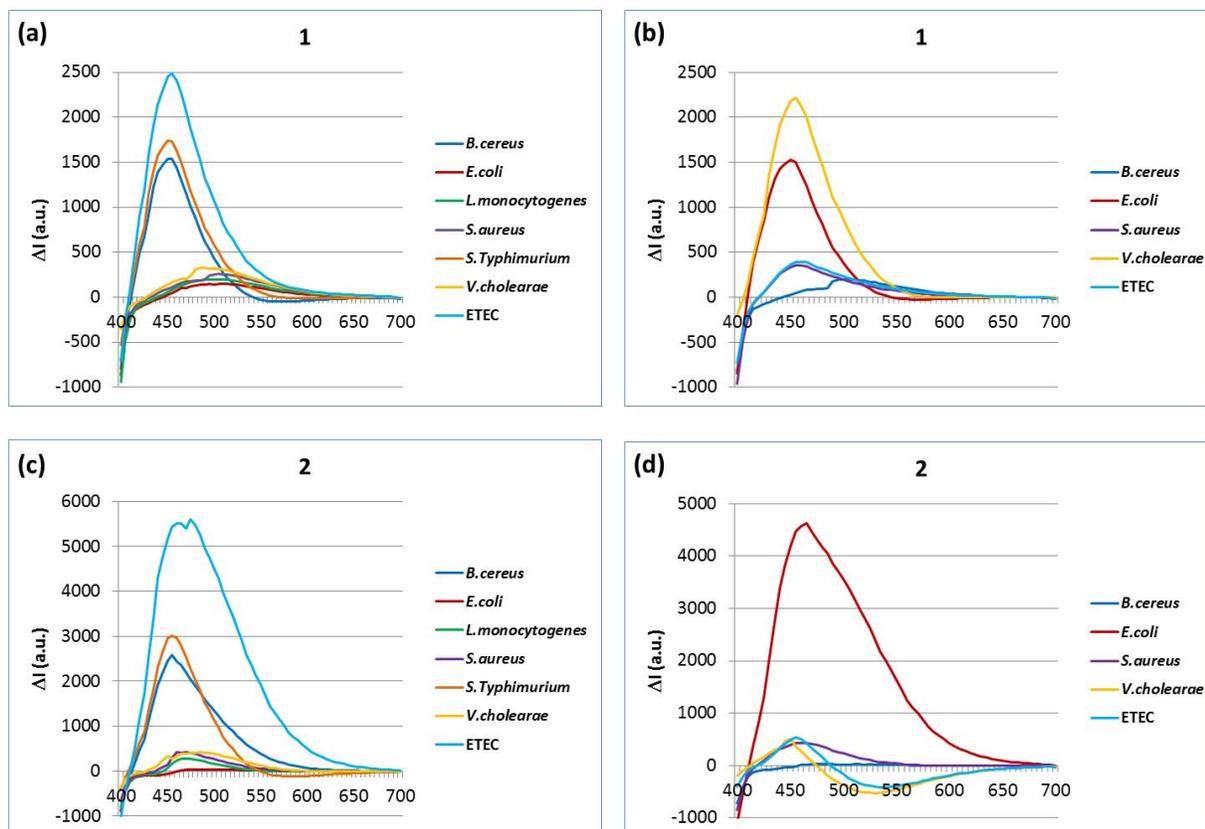
**Fig. S12.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 470 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



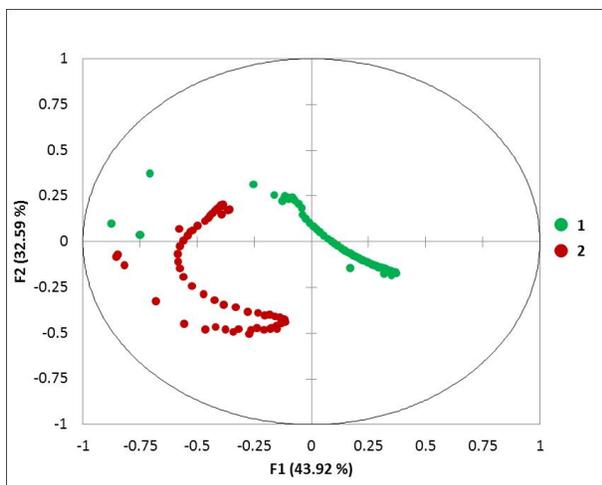
**Fig. S13.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores 1-3 upon mixing with each bacteria sample at the emission wavelength of 450 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



**Fig. S14.** (left) LDA score plot and (right) PCA score plot obtained from  $\Delta I$  values of fluorophores **1-3** upon mixing with each bacteria sample at the emission wavelength of 430 nm. Oval outlines in LDA score plot indicate groups of bacteria sample at 95% confidence level, while oval outlines in PCA score plot are arbitrarily oriented.



**Fig. S15.** Fluorescence responses ( $\Delta I$ ) of fluorophore (a) **1** upon addition of the pathogens-spiked mineral water sample, (b) **1** upon addition of the pathogens-spiked non-mineral water sample, (c) **2** upon addition of the pathogens-spiked mineral water sample and (d) **2** upon addition of the pathogens-spiked non-mineral water sample. Each spectral line is an averaged  $\Delta I$  of 11 repetitive samples.



**Fig. S16.** LDA loading plot of  $\Delta I$  values of fluorophores **1** and **2** upon mixing with bacteria-spiked drinking water samples.