Electronic Supplementary Information for:

Molecular Design for Sub-Micromolar Enzyme-Instructed Self-Assembly (EISA)

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(1) Fluorescence detection

Experiments were designed to find the detection limit of the Horiba Duetta fluorometer. ZnTPP was dissolved in toluene to prepare a stock solution of 500 nM. The stock solution was gradually diluted with toluene and analyzed by fluorescence spectroscopy. The bandpass was set at 10 nm for both excitation and emission. The integration time was 0.05 s. Samples were excited at 423 nm and fluorescence intensity was recorded at 646 nm. The intensity of fluorescence was plotted as a function of concentration (Figure S-1). The results show detection of the fluorescence of ZnTPP at a concentration as low as 200 pM with a linear range from 200 pM to 200 nM.

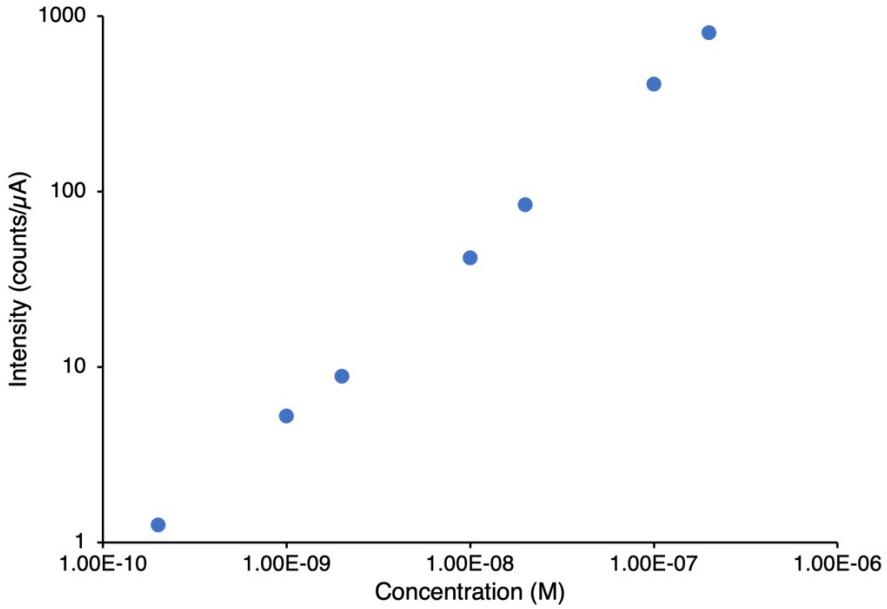
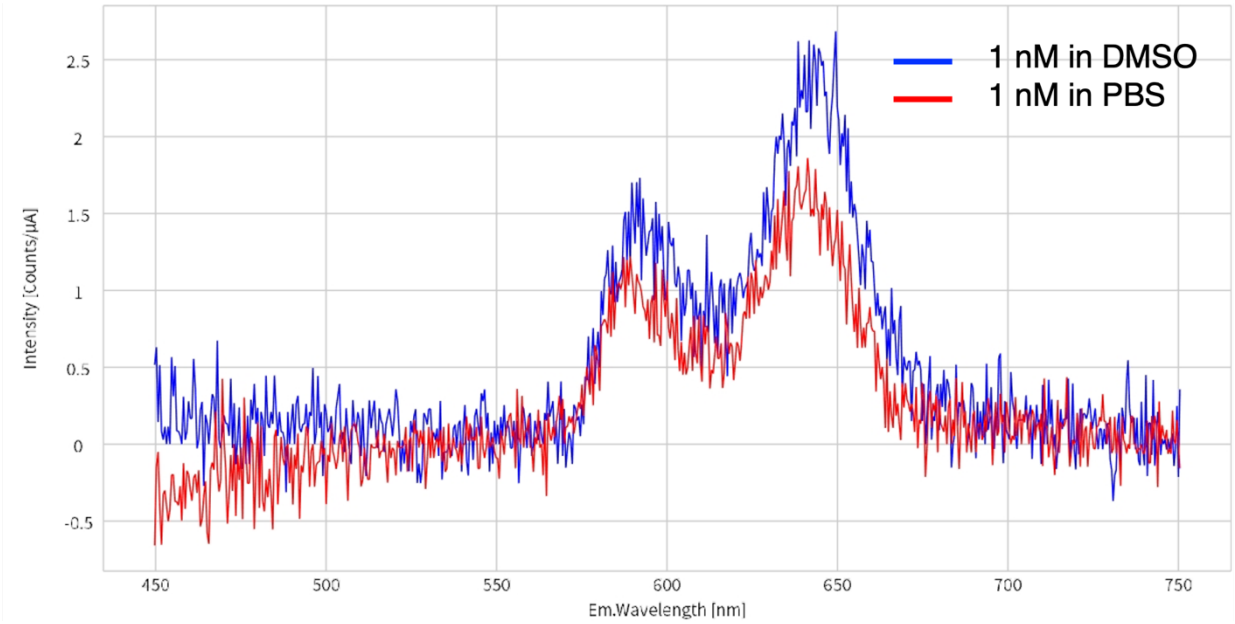
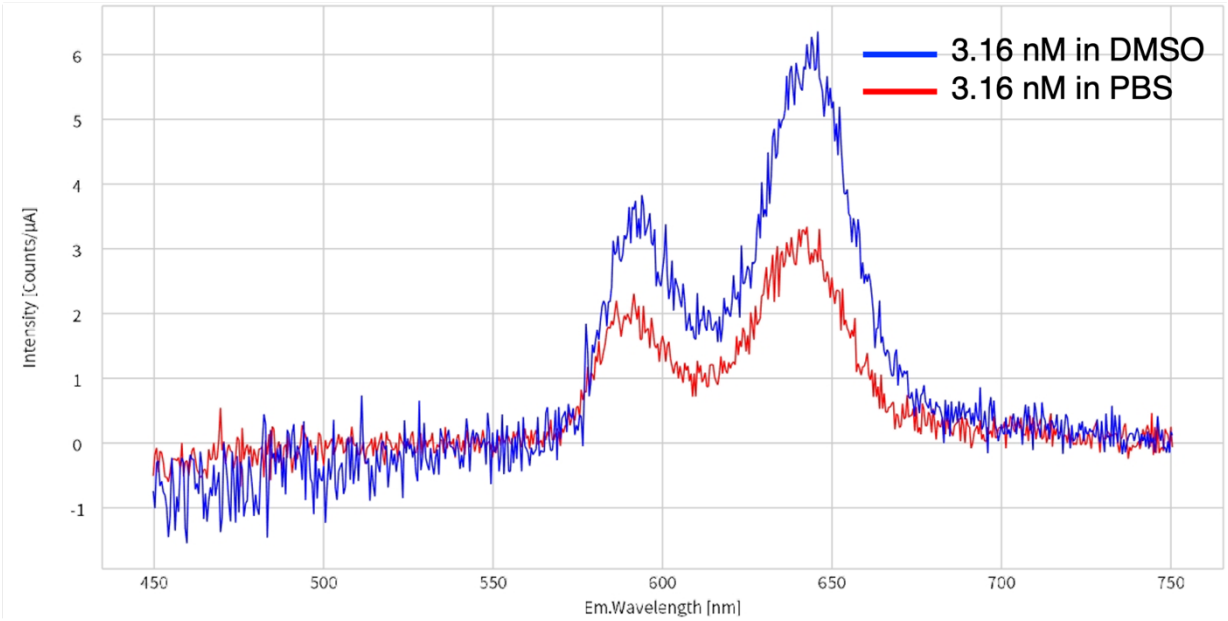
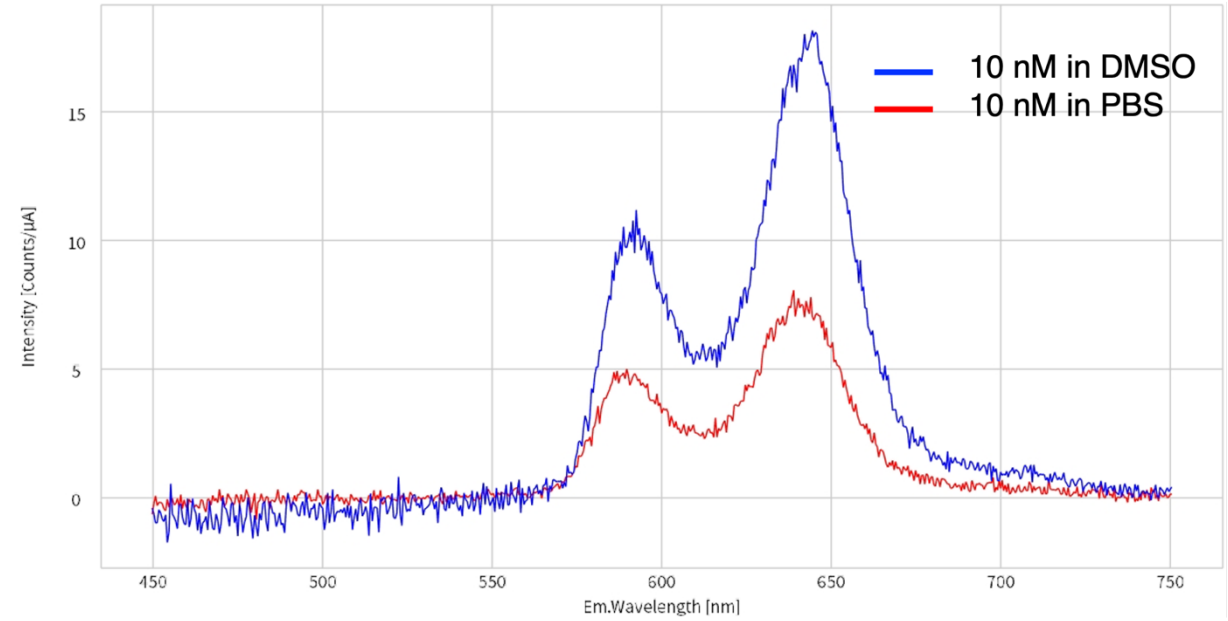


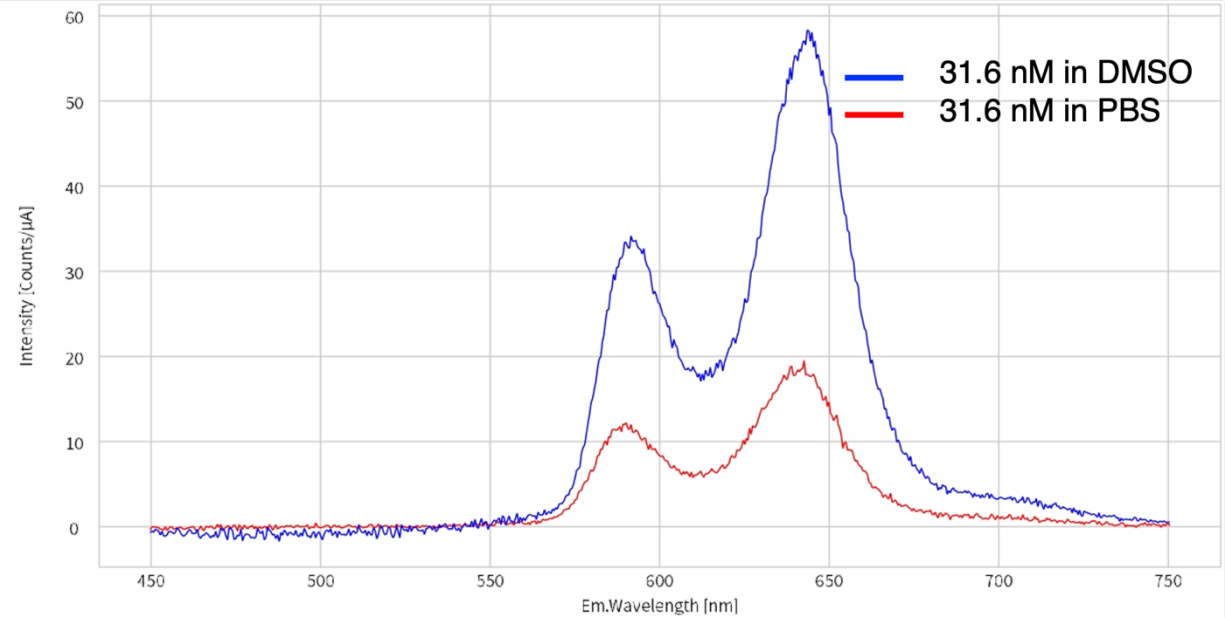
Figure S-1. Linear detection range of the Horiba Duetta fluorometer.

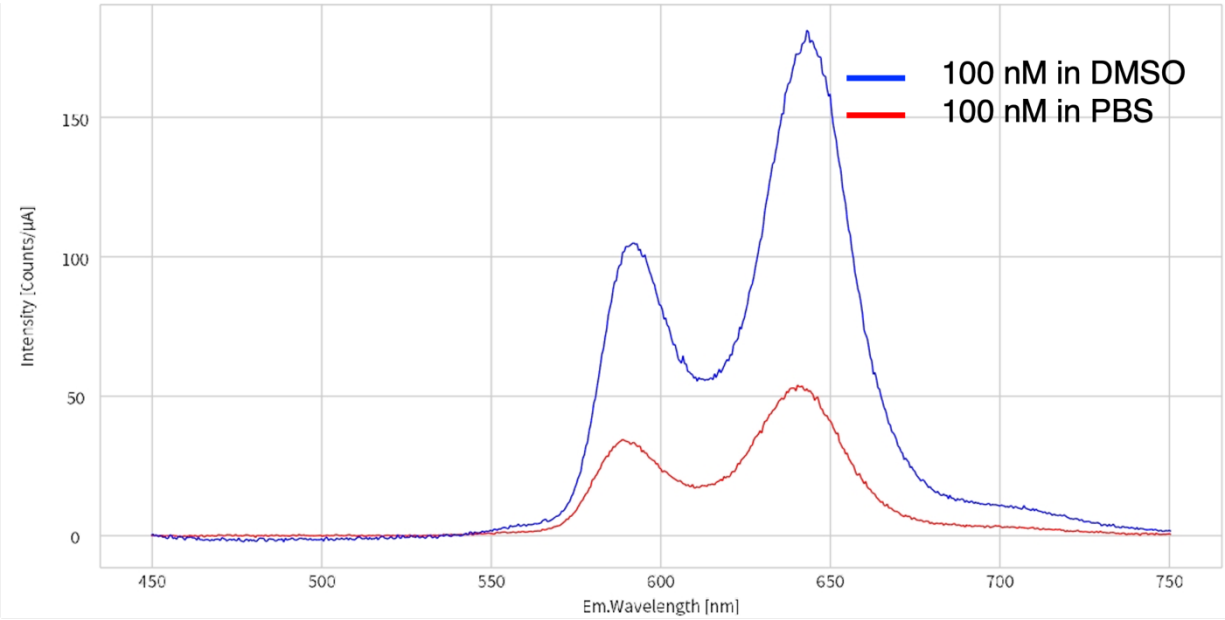
(2) Fluorescence data of porphyrin 1′ in DMSO versus PBS




3.16 nM in DMSO
3.16 nM in PBS
Intensity [Counts/µA]
Em.Wavelength [nm]


10 nM in DMSO
10 nM in PBS
Intensity [Counts/µA]
Em.Wavelength [nm]


31.6 nM in DMSO
31.6 nM in PBS
Intensity [Counts/µA]
Em.Wavelength [nm]
0
10
20
30
40
50
60
450
500
550
600
650
700
750


100 nM in DMSO
100 nM in PBS
Intensity [Counts/µA]
Em.Wavelength [nm]
0
50
100
150
450
500
550
600
650
700
750

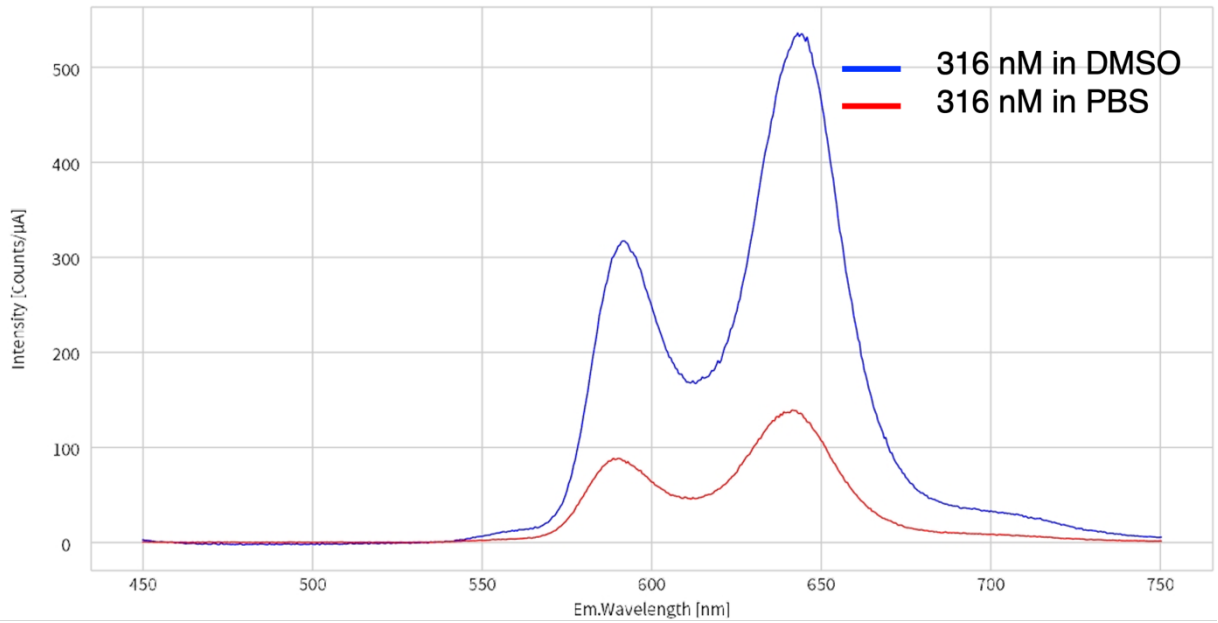


Figure S-2. Fluorescence data of porphyrin **1′** in DMSO versus PBS. Blue curve: sample in DMSO, red curve: sample in PBS.