

Supplementary Information

FRET-based nanosensors for monitoring and quantification of alcohols in living cells

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Table S1: Docking of odorant binding protein with ethanol and other alcohols.

Ethanol and other alcohols	Docking score
Ethanol	-4.6
Methanol	-2.0
Propanol	-3.4
n-Butanol	-4.2

Fig. S1: a. Docking pose and ligand interaction diagram of human OBP_{IIa} with ethanol. b. Closer view of the interaction.

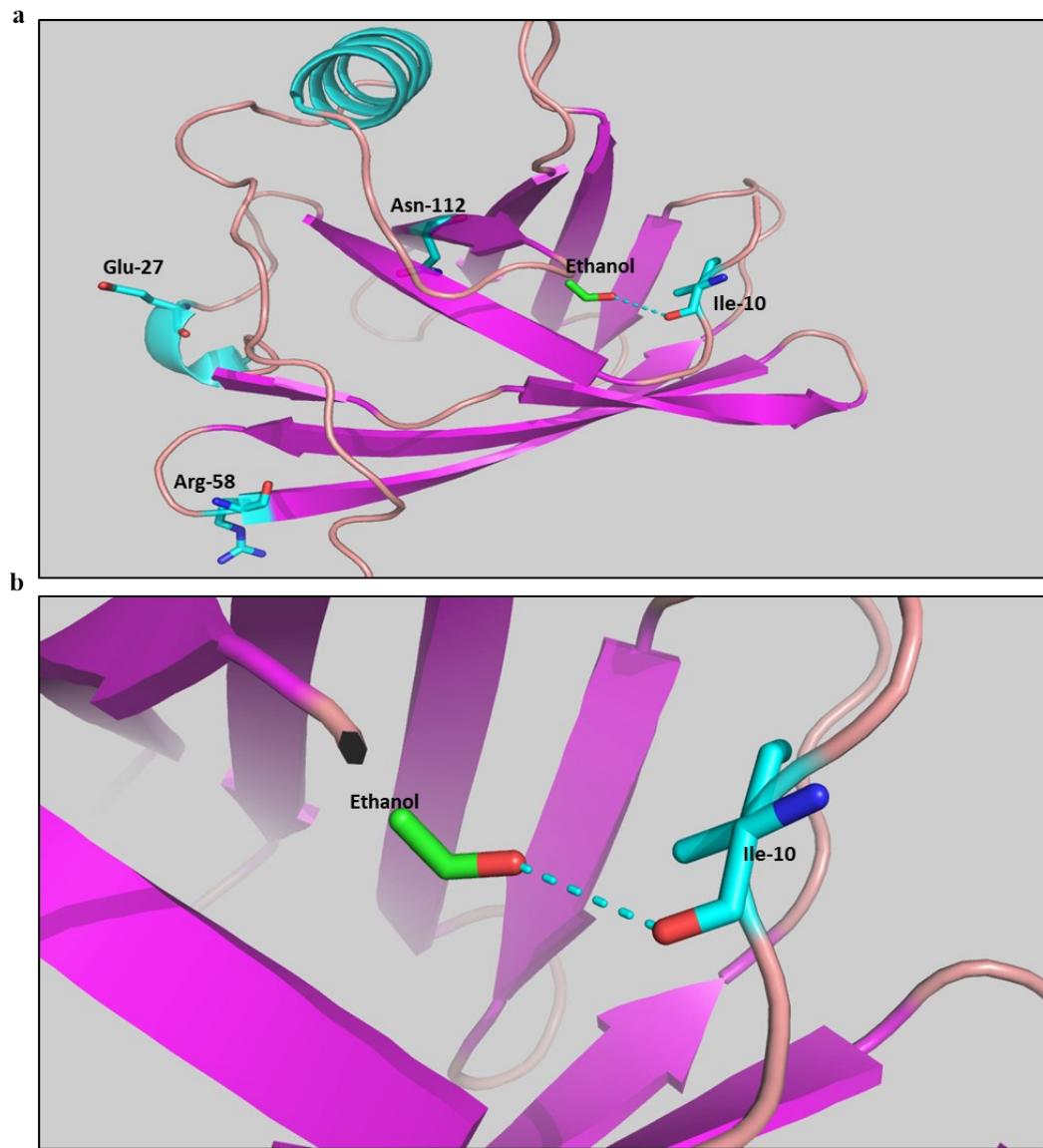


Fig. S2: Linear construction of the nanosensor construct ECFP-OBP_{IIa}-Venus.

Fig. S3: Ligand binding fitting curve of sensor FLIPO. a. Emission intensity ratio change of WT purified protein in presence of varying ethanol concentrations. b. *In vitro* ligand dependent FRET ratio changes of WT and mutant sensors.

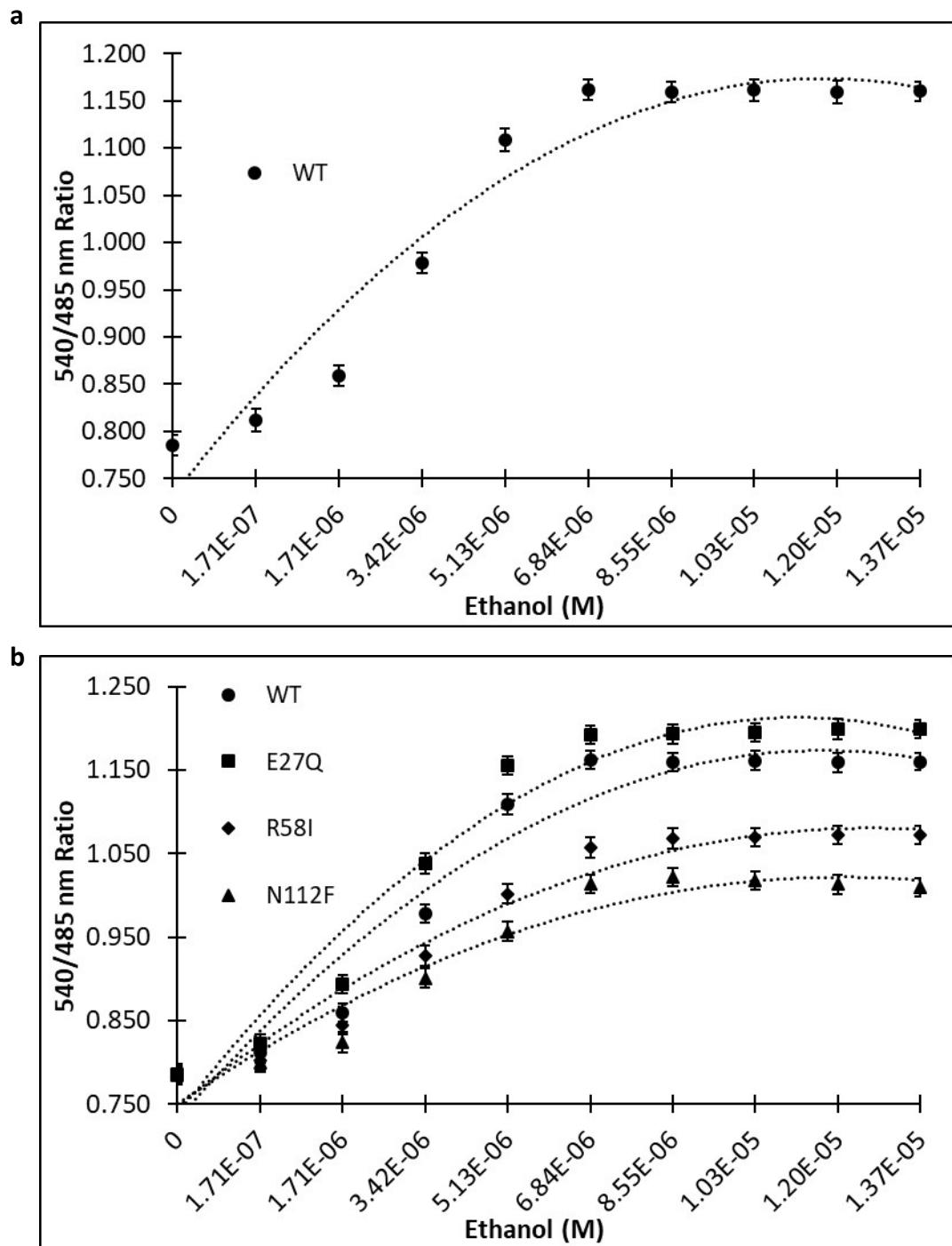


Fig. S4: Confocal imaging of the bacterial cells expressing the nanosensor FLIPO-42.

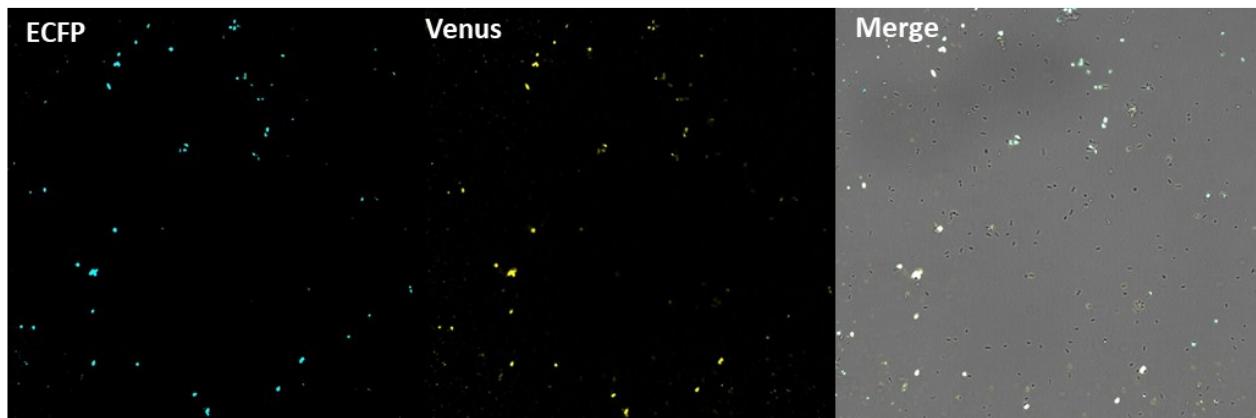


Fig. S5: FRET ratio changes with ethanol in yeast cells expressing the nanosensor FLIPO-42.

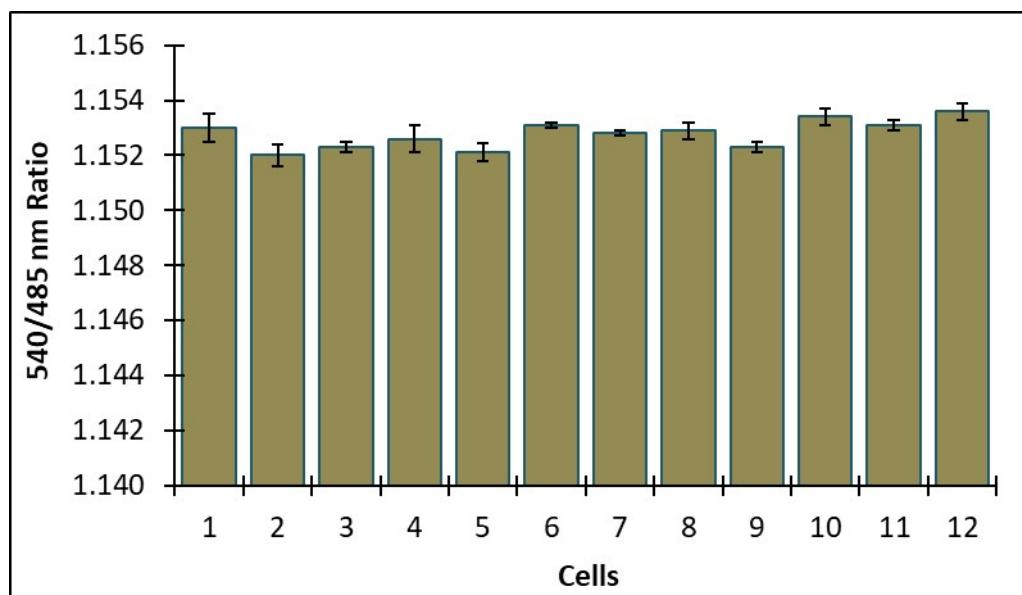


Fig. S6: Emission intensity ratio changes in HEK-293T cells expressing FLIPO-42 in presence of ethanol.

