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.

<table>
<thead>
<tr>
<th>Ethanol and other alcohols</th>
<th>Docking score</th>
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<tbody>
<tr>
<td>Ethanol</td>
<td>-4.6</td>
</tr>
<tr>
<td>Methanol</td>
<td>-2.0</td>
</tr>
<tr>
<td>Propanol</td>
<td>-3.4</td>
</tr>
<tr>
<td>n-Butanol</td>
<td>-4.2</td>
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**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.