

**S1 Table.** Bacteria used and created in this study.

Strain	Description/ Relevant Details	Source
<b>Wild-type Bacteria</b>		
<i>Vibrio</i> ZWU0020	Non-toxigenic strain of <i>Vibrio cholerae</i> isolated from the zebrafish gut. IMG genome ID: 2703719078	[1]
<b>Recombinant Bacteria</b>		
<i>Vibrio</i> Δmot	<i>Vibrio</i> ZWU0020 with unmarked, in-frame deletion of <i>pomAB</i> (non-motile)	[2]
<i>Vibrio</i> Δche	<i>Vibrio</i> ZWU0020 with unmarked, in-frame deletion of <i>cheA2</i> (non-chemotactic)	This study
<i>Aeromonas</i> ZOR0001 attTn7::dTomo	Strain of <i>Aeromonas veronii</i> isolated from the zebrafish gut. Constitutively expresses dTomato; Gent <sup>R</sup>	[2]
<i>Vibrio</i> ZWU0020 attTn7::dTomo	constitutively expresses dTomato; Gent <sup>R</sup>	[2]
<i>Vibrio</i> ZWU0020 attTn7::sfGFP	constitutively expresses sfGFP; Gent <sup>R</sup>	[2]
<i>Vibrio</i> Δmot attTn7::dTomo	constitutively expresses dTomato; Gent <sup>R</sup>	This study
<i>Vibrio</i> Δche attTn7::dTomo	constitutively expresses dTomato; Gent <sup>R</sup>	This study
<i>Vibrio</i> motLOF	<i>Vibrio</i> carrying the motility loss-of-function switch within the chromosome at the attTn7 site; constitutively expresses dTomato; Gent <sup>R</sup>	This study
<i>Vibrio</i> Δmot <sup>GOF</sup>	Δmot carrying the motility gain-of-function switch within the chromosome at the attTn7 site; constitutively expresses dTomato; Gent <sup>R</sup>	This study
<i>Vibrio</i> Δche <sup>GOF</sup>	Δche carrying the chemotaxis gain-of-function switch within the chromosome at the attTn7 site; constitutively expresses dTomato; Gent <sup>R</sup>	This study
<b>Other bacteria used for molecular biology and switch optimization</b>		
<i>E. coli</i> SM10	Donor strain used for conjugation	[3]
DH5α	<i>E. coli</i> cloning strain	NEB
<i>E. coli</i> MG1655	Used for switch prototyping and optimization	[4]
<i>E. coli</i> HS	Used for switch prototyping and optimization	[5]
<i>Enterobacter</i> ZOR0014	Source of <i>tetR</i> gene	[1]

## REFERENCES

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