BBa_F2620

3OC$_6$AHL → PoPs

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Description and Usage:

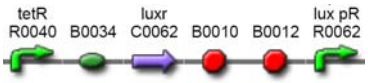
***Device input* is 3OC$_6$HSL. *Device output* is GFP/s·OD** (related to polymerases per second, **PoPS,** produced from activated LuxpR receiver) produced at a LuxR-regulated operator A transcription factor [LuxR] that is active in the presence of cell-cell signaling molecule [3OC$_6$AHL] is constitutively expressed from an operator [TetR].Full GFP/s·OD output at high 3OC$_6$ AHL levels and low plasmid copy [e.g., pSB3K3] results in a reduced cell growth rate. If used in a cell containing TetR then a second input signal [aTc] can be used to produce a logical *AND* function.

Characteristics

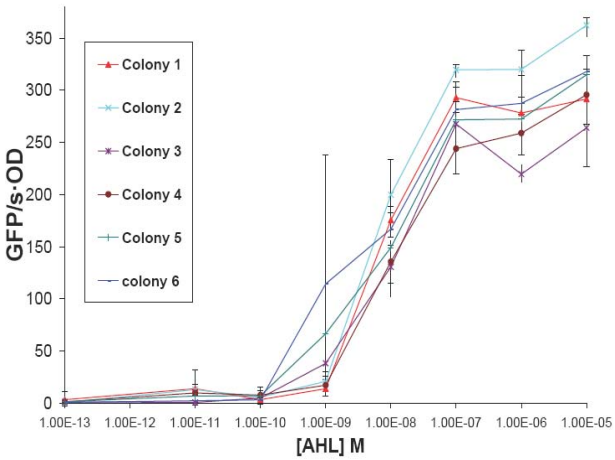
Full Output: 247 GFP/s·OD ± 23%
Full Output Variability Coefficient: **8.3%**
Switch Point: **10 nM** 3OC$_6$AHL, exogenous
LH Latency: **7** minutes
HL Latency: **86** minutes

Key Components

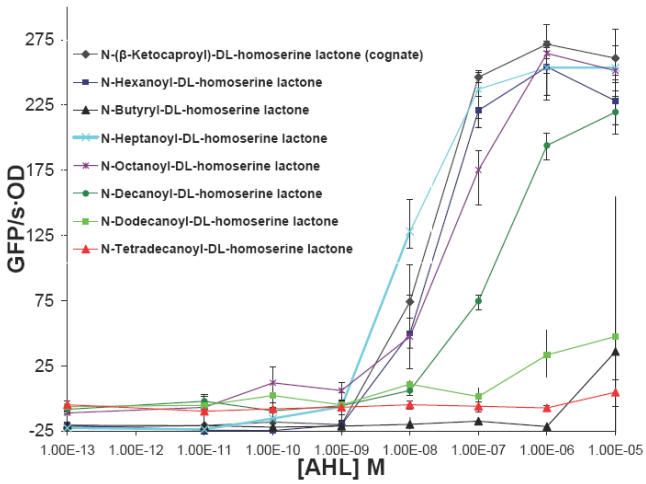
BBa_R0040: TetR-regulated operator
BBa_C0062: luxR ORF
BBa_R0062: LuxR-regulated operator



Transfer Function Variability:

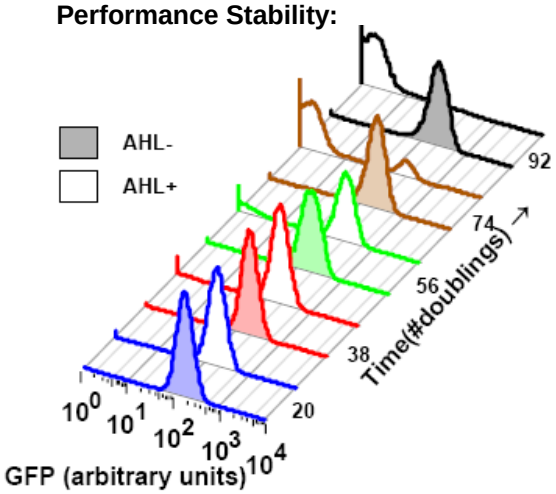


Specificity:



Signaling Devices

Performance Stability:



Full Induction: device non-functional after 74 doublings

No induction: device functional for over 100 doublings

Compatibility

Device has been shown to work in *MC4100*, *MG1655*, and *DH-5α*.

Device has been shown to with on *pSB3K3* and *pSB1A2*.

Device has been shown to work with *E0430* and *E0434*.

Crosstalk with systems containing *TetR, some molecules of AHL moiety*.

*Device output measured indirectly via fluorescence from *BBa_E0430*, [ ] = geometric mean, arbitrary units. Host cell *MG1655*, device carried on *pSB3K3*, 5ml batch flask, supplemented M9 media, FACScan cytometer [see *MIT SBWG FACS protocol*].

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