**Description**
A transcription factor (LuxR, BBa_C0062) that is active in the presence of cell-cell signaling molecule 3OC_{6}HSL is controlled by a TetR-regulated operator (BBa_R0040). Device input is 3OC_{6}HSL. Device output is PoPS from a LuxR-regulated operator. If used in a cell containing TetR then a second input signal such as aTc can be used to produce a Boolean AND function.

**Characteristics**
- **Input Swing:** 1E-9 to 1E-6 M 3OC_{6}HSL, exogenous
- **Output Swing:** 0±1 to 503±1 GFP molecules cfu^{-1} s^{-1}
- **Switch Point:** 7±1 nM 3OC_{6}HSL, exogenous
- **LH Response:** 9 min (t_{50%}), 27 min (t_{90%})

**Key Parts**
- **BBa_R0040:** TetR-regulated operator
- **BBa_C0062:** luxR ORF
- **BBa_R0062:** LuxR-regulated operator

**Transfer Function**

**Response Time**

**Specificity**

**Stability**

**Demand (low/high input)**
- **Translational:** 256/8048 ribosomes cfu^{-1}
- **3.8E3/1.2E5** charged tRNA cfu^{-1} s^{-1}

**Compatibility**
- **Chassis:** Compatible with MC4100, MG1655, and DH5α
- **Plasmids:** Compatible with pSB3K3 and pSB1A2
- **Devices:** Compatible with E0240, E0430 and E0434
- **Crossstalk** with systems containing TetR (C0040)
- **Signaling:** Crossstalk with input molecules similar to 3OC_{6}HSL

**Stability (low/high input)**
- **Genetic:** >92/74 replication events**
- **Performance:** >92/74 replication events**

**Conditions (abridged)**
- **Output:** Indirect via BBa_E0240
- **Vector:** pSB3K3
- **Chassis:** MG1655
- **Culture:** Supplemented M9, 37°C

*Equipment: PE Victor3 plate reader
**Equipment: BD FACScan cytometer