<table>
<thead>
<tr>
<th>Group</th>
<th>Fluorescent reporter, construction (strain) †</th>
<th>Max*</th>
<th>Min*</th>
<th>α</th>
<th>δ</th>
<th>K</th>
<th>n</th>
<th>Reduced $\chi^2$ (R²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-clustered</td>
<td>CFP, PLlacO-1::cfp at intS &amp; PLlacO-1::yfp at galK (HL1852)</td>
<td>2263 ± 253</td>
<td>463 ± 16</td>
<td>2145 ± 70</td>
<td>479 ± 9</td>
<td>24.9 ± 2.0</td>
<td>1.30 ± 0.09</td>
<td>1.34 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered</td>
<td>YFP, PLlacO-1::cfp at intS &amp; PLlacO-1::yfp at galK (HL1852)</td>
<td>824 ± 213</td>
<td>93 ± 10</td>
<td>771 ± 87</td>
<td>96 ± 8</td>
<td>24.8 ± 4.1</td>
<td>1.54 ± 0.19</td>
<td>0.13 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered</td>
<td>CFP, PLlacO-1::cfp at galK &amp; PLlacO-1::yfp at intS (HL3360)</td>
<td>1088 ± 19</td>
<td>132 ± 14</td>
<td>927 ± 47</td>
<td>135 ± 7</td>
<td>20.1 ± 2.5</td>
<td>1.71 ± 0.26</td>
<td>0.07 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered</td>
<td>YFP, PLlacO-1::cfp at galK &amp; PLlacO-1::yfp at intS (HL3360)</td>
<td>1180 ± 84</td>
<td>90 ± 12</td>
<td>1122 ± 89</td>
<td>92 ± 8</td>
<td>27.0 ± 3.0</td>
<td>1.58 ± 0.14</td>
<td>0.09 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered</td>
<td>CFP, PLlacO-1::cfp at intS &amp; PLlacO-1::yfp at galK (HL5086)</td>
<td>5622 ± 119</td>
<td>449 ± 23</td>
<td>5175 ± 88</td>
<td>524 ± 10</td>
<td>19.8 ± 0.5</td>
<td>1.91 ± 0.06</td>
<td>6.14 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered</td>
<td>YFP, PLlacO-1::cfp at intS &amp; PLlacO-1::yfp at galK (HL5086)</td>
<td>3901 ± 507</td>
<td>221 ± 66</td>
<td>3655 ± 86</td>
<td>282 ± 9</td>
<td>19.2 ± 0.6</td>
<td>2.04 ± 0.08</td>
<td>3.47 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered</td>
<td>CFP, PLlacO-1::cfp at intS &amp; PLlacO-1::yfp at galK (HL5087)</td>
<td>7721 ± 1482</td>
<td>1470 ± 499</td>
<td>6285 ± 292</td>
<td>1464 ± 27</td>
<td>18.1 ± 2.3</td>
<td>1.39 ± 0.12</td>
<td>0.19 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered</td>
<td>YFP, PLlacO-1::cfp at intS &amp; PLlacO-1::yfp at galK (HL5087)</td>
<td>3161 ± 512</td>
<td>340 ± 16</td>
<td>2975 ± 322</td>
<td>341 ± 15</td>
<td>31.7 ± 7.2</td>
<td>1.53 ± 0.32</td>
<td>0.10 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered, non-clustered #</td>
<td>CFP, PLlacO-1::cfp at intS &amp; PLtetO-1::yfp at galK (HL5113)</td>
<td>4258 ± 223</td>
<td>320 ± 10</td>
<td>4075 ± 273</td>
<td>330 ± 26</td>
<td>19.9 ± 3.2</td>
<td>1.80 ± 0.27</td>
<td>0.25 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-clustered, non-clustered #</td>
<td>YFP, PLlacO-1::yfp at galK &amp; PLtetO-1::cfp at intS (HL5149)</td>
<td>3028 ± 230</td>
<td>225 ± 22</td>
<td>3165 ± 321</td>
<td>237 ± 15</td>
<td>31.0 ± 6.7</td>
<td>1.51 ± 0.30</td>
<td>1.11 (0.99)</td>
</tr>
<tr>
<td>Operon (1st gene)</td>
<td>CFP, PLlacO-1::cfp-yfp at intS (HL3573)</td>
<td>6881 ± 94</td>
<td>701 ± 56</td>
<td>6320 ± 300</td>
<td>713 ± 27</td>
<td>25.8 ± 3.0</td>
<td>1.51 ± 0.14</td>
<td>0.76 (&gt;0.99)</td>
</tr>
<tr>
<td>Operon (1st gene)</td>
<td>YFP, PLlacO-1::yfp-cfp at galK (HL3578)</td>
<td>2913 ± 241</td>
<td>120 ± 15</td>
<td>2847 ± 212</td>
<td>123 ± 15</td>
<td>17.6 ± 2.7</td>
<td>1.67 ± 0.36</td>
<td>0.13 (&gt;0.99)</td>
</tr>
</tbody>
</table>

*Actual values obtained at 0 and 1 mM IPTG as opposed to fit values. † lacI is in the native position in all strains. # Hill function was fitted only to the gene under the control of PLlacO-1.
Table S4 continued  Maximum and minimum expression levels and parameters obtained from fits to the Hill function

<table>
<thead>
<tr>
<th>Group</th>
<th>Fluorescent reporter, construction (strain) ‡</th>
<th>Max*</th>
<th>Min*</th>
<th>α</th>
<th>δ</th>
<th>K</th>
<th>n</th>
<th>Reduced χ² (R²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operon (2nd gene)</td>
<td>CFP, PllacO-1::yfp::cfp at galK (HL3578)</td>
<td>2671 ± 198</td>
<td>302 ± 39</td>
<td>2395 ± 260</td>
<td>308 ± 27</td>
<td>14.6 ± 4.2</td>
<td>1.75 ± 0.44</td>
<td>0.06 (&gt;0.99)</td>
</tr>
<tr>
<td>Operon (2nd gene)</td>
<td>YFP, PllacO-1::yfp::atS (HL3573)</td>
<td>995 ± 48</td>
<td>162 ± 7</td>
<td>1080 ± 232</td>
<td>165 ± 15</td>
<td>29.1 ± 12</td>
<td>2.16 ± 1.26</td>
<td>0.19 (0.98)</td>
</tr>
<tr>
<td>Codirectional (1st gene)</td>
<td>CFP, PllacO-1::yfp::T1 term::PllacO-1::yfp at intS (HL3515)</td>
<td>6621 ± 326</td>
<td>82 ± 15</td>
<td>5934 ± 219</td>
<td>85 ± 15</td>
<td>45.4 ± 2.3</td>
<td>3.59 ± 0.54</td>
<td>0.74 (&gt;0.99)</td>
</tr>
<tr>
<td>Codirectional (1st gene)</td>
<td>YFP, PllacO-1::yfp::T1 term::PllacO-1::yfp at galK (HL3546)</td>
<td>2913 ± 241</td>
<td>38 ± 6</td>
<td>3171 ± 176</td>
<td>39 ± 15</td>
<td>36.3 ± 3.3</td>
<td>4.06 ± 0.92</td>
<td>0.03 (&gt;0.99)</td>
</tr>
<tr>
<td>Codirectional (2nd gene)</td>
<td>CFP, PllacO-1::yfp::T1 term::PllacO-1::yfp at galK (HL3546)</td>
<td>6169 ± 222</td>
<td>177 ± 14</td>
<td>6034 ± 271</td>
<td>180 ± 25</td>
<td>34.4 ± 2.2</td>
<td>3.97 ± 0.64</td>
<td>0.07 (&gt;0.99)</td>
</tr>
<tr>
<td>Codirectional (2nd gene)</td>
<td>YFP, PllacO-1::yfp::T1 term::PllacO-1::yfp at intS (HL3515)</td>
<td>3138 ± 244</td>
<td>56 ± 0</td>
<td>3864 ± 60</td>
<td>60 ± 6</td>
<td>47.3 ± 0.6</td>
<td>3.53 ± 0.27</td>
<td>4.35 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-coregulated, codirectional#</td>
<td>CFP, PllacO-1::yfp::T1 term::PllacO-1::yfp at intS (HL3515)</td>
<td>6298 ± 326</td>
<td>144 ± 29</td>
<td>5995 ± 271</td>
<td>154 ± 27</td>
<td>15.9 ± 1.9</td>
<td>1.63 ± 0.16</td>
<td>0.83 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-coregulated, codirectional#</td>
<td>YFP, PllacO-1::yfp::T1 term::PllacO-1::yfp at galK (HL3544)</td>
<td>3425 ± 119</td>
<td>239 ± 20</td>
<td>3397 ± 213</td>
<td>242 ± 15</td>
<td>17.7 ± 2.3</td>
<td>1.67 ± 0.30</td>
<td>0.15 (&gt;0.99)</td>
</tr>
<tr>
<td>Divergent</td>
<td>CFP, PllacO-1::yfp &amp; PllacO-1::yfp at intS (HL4343)</td>
<td>2429 ± 76</td>
<td>56 ± 8</td>
<td>2366 ± 62</td>
<td>62 ± 3</td>
<td>61.0 ± 3.5</td>
<td>2.64 ± 0.12</td>
<td>1.95 (&gt;0.99)</td>
</tr>
<tr>
<td>Divergent</td>
<td>YFP, PllacO-1::yfp &amp; PllacO-1::yfp at intS (HL4343)</td>
<td>3934 ± 58</td>
<td>34 ± 4</td>
<td>3385 ± 60</td>
<td>46 ± 2</td>
<td>61.7 ± 2.4</td>
<td>3.11 ± 0.12</td>
<td>9.20 (0.99)</td>
</tr>
<tr>
<td>Divergent</td>
<td>CFP, PllacO-1::yfp &amp; PllacO-1::yfp at galK (HL4348)</td>
<td>8316 ± 633</td>
<td>98 ± 13</td>
<td>7973 ± 61</td>
<td>127 ± 2</td>
<td>64.0 ± 1.0</td>
<td>3.04 ± 0.05</td>
<td>39.73 (0.99)</td>
</tr>
<tr>
<td>Divergent</td>
<td>YFP, PllacO-1::yfp &amp; PllacO-1::yfp at galK (HL4348)</td>
<td>811 ± 126</td>
<td>-4 ± 5</td>
<td>750 ± 49</td>
<td>5.0 ± 2</td>
<td>48.9 ± 9.1</td>
<td>4.47 ± 1.25</td>
<td>0.73 (0.99)</td>
</tr>
<tr>
<td>Non-coregulated, divergent#</td>
<td>CFP, PllacO-1::yfp &amp; PlltetO-1::yfp at intS (HL4342)</td>
<td>1751 ± 876</td>
<td>342 ± 17</td>
<td>2027 ± 35</td>
<td>341 ± 4</td>
<td>9.6 ± 0.2</td>
<td>1.42 ± 0.03</td>
<td>10.52 (&gt;0.99)</td>
</tr>
<tr>
<td>Non-coregulated, divergent#</td>
<td>YFP, PllacO-1::yfp &amp; PlltetO-1::yfp at galK (HL4302)</td>
<td>786 ± 132</td>
<td>69 ± 7</td>
<td>797 ± 50</td>
<td>69 ± 4</td>
<td>15.3 ± 1.4</td>
<td>1.24 ± 0.07</td>
<td>3.83 (&gt;0.99)</td>
</tr>
</tbody>
</table>

*Actual values obtained at 0 and 1 mM IPTG as opposed to fit values. ‡ lacI is in the native position in all strains. # Hill function was fitted only to the gene under the control of PllacO-1.