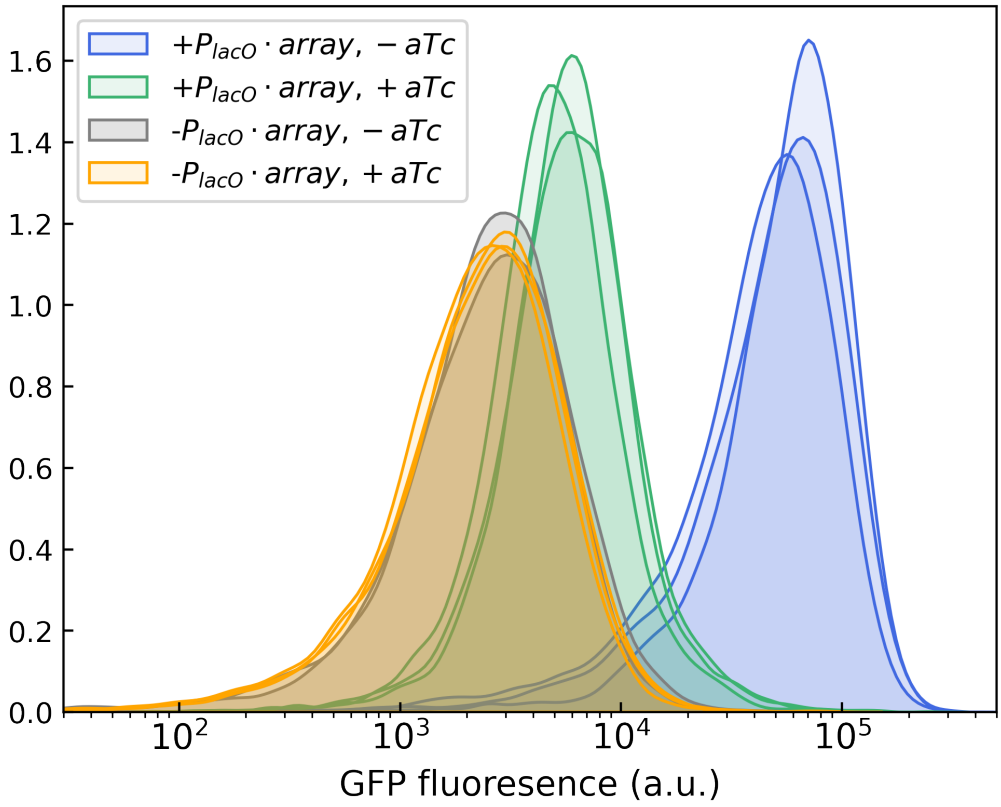

Figure 1: Histogram of GFP fluorescence signals for data in Fig. 2b. Without P_{lacO}-arrays, GFP levels are low regardless of whether aTc is present or not (orange distribution and grey distribution). With P_{lacO}-arrays, the presence of aTc significantly reduces the GFP levels (green distribution versus blue distribution).

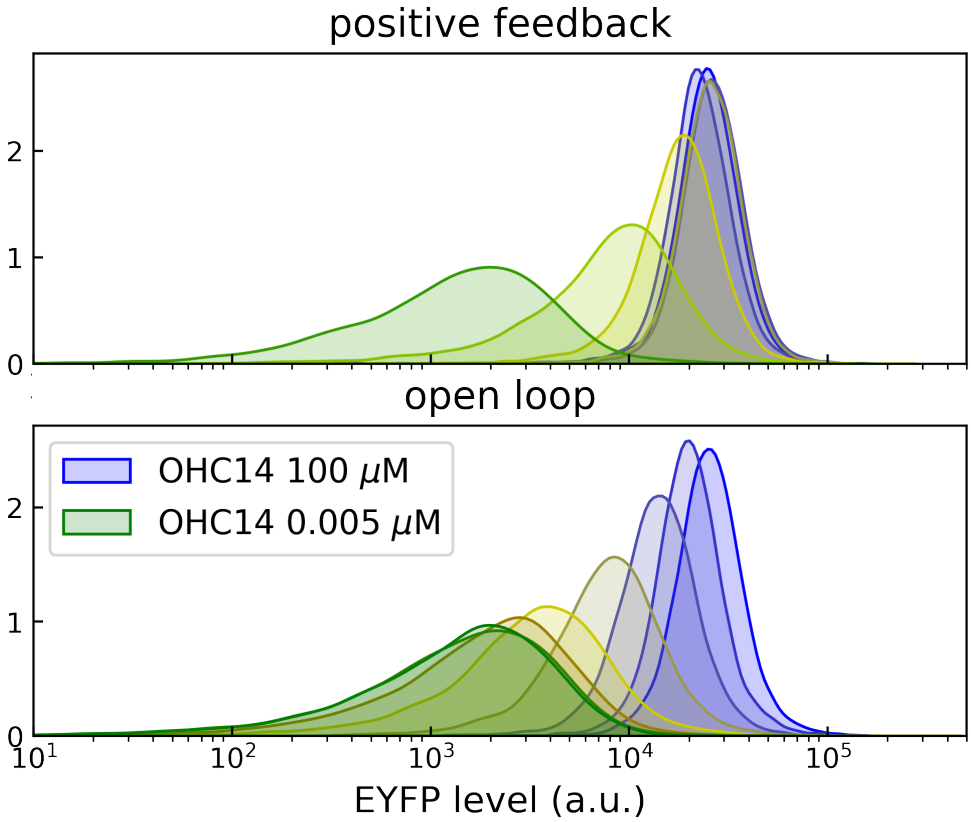

Figure 2: Histograms of EYFP fluorescence signals for data in Fig. 2c. (Upper) Receiver circuit with positive feedback. Histograms measured for one replicate is presented. The histogram of EYFP changes as OHC14 increases from 0.005 μM (green distribution) to 100 μM (blue distribution). (Lower) The same as in the upper panel but for receiver circuit in open loop.

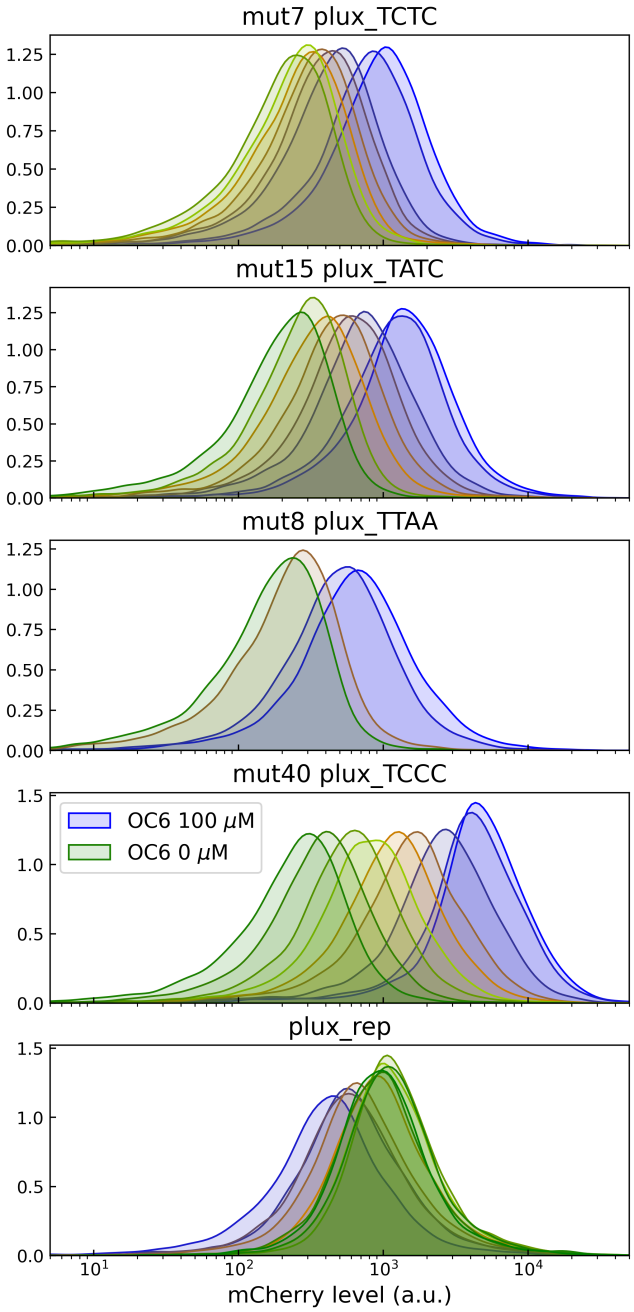

Figure 3: Histograms of mCherry fluorescence signals for data in Fig. 2e. For each P_{lux}, histograms measured for one replicate is presented. The inducer OC6 concentration increases from 0 μM (green distribution) 100 μM (blue distribution).

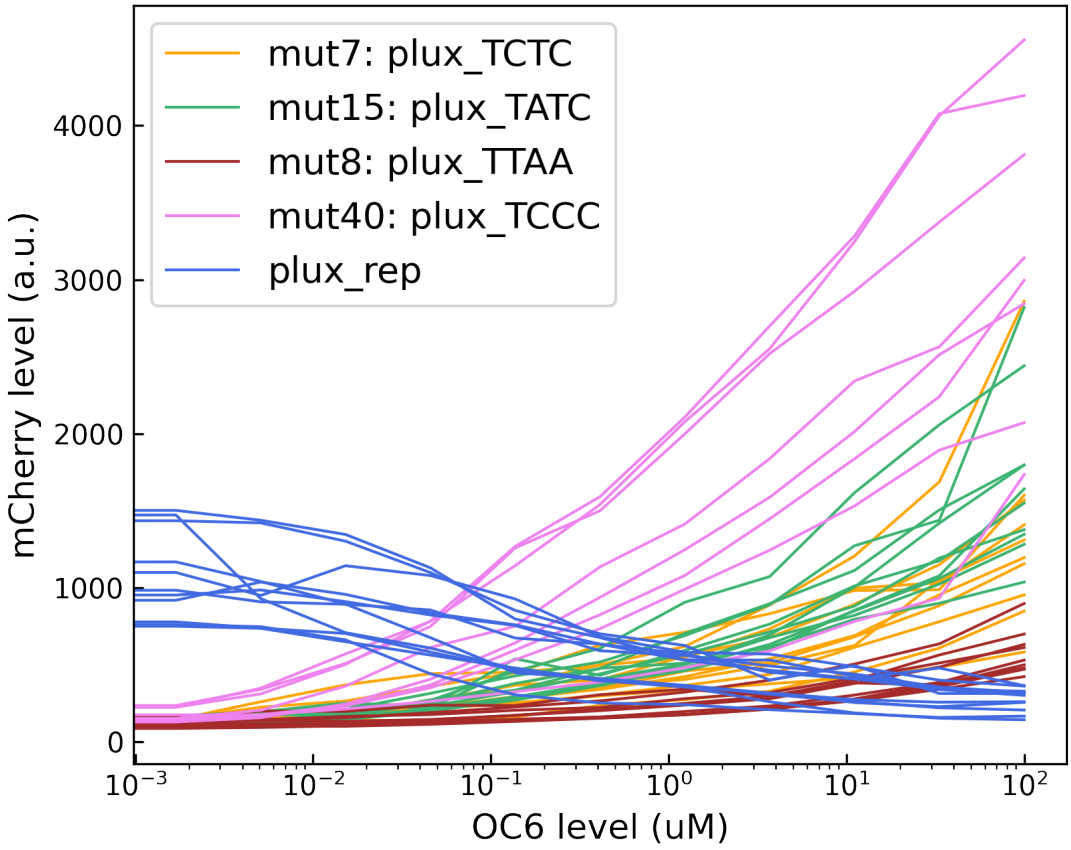

Figure 4: Dose response curves of individual replicate for senders as presented in Fig. 2e. The color code is the same as in Fig. 2e.

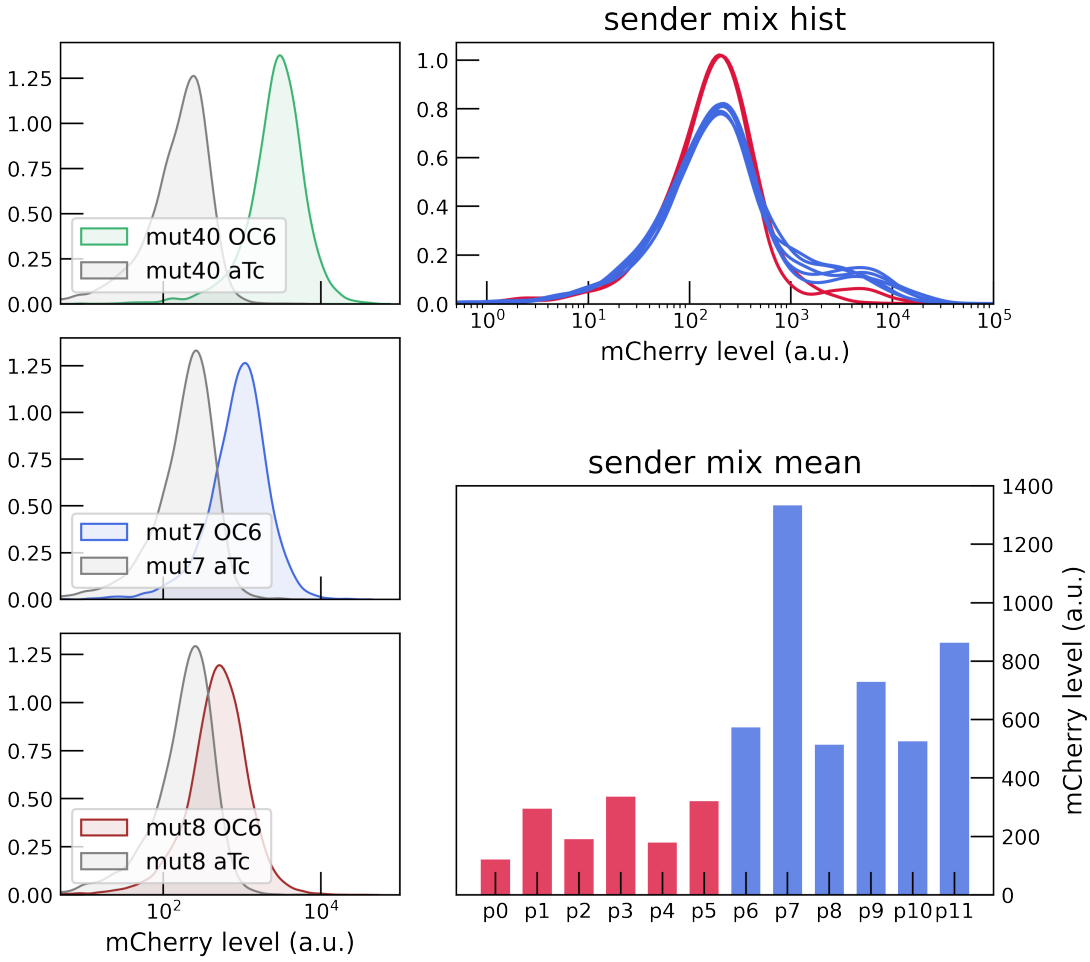

Figure 5: Histograms of mCherry fluorescence measurement for senders involved in one trial of 4-bit pattern experiments as presented in Fig. 3c. (Left) Senders with different P_{lux} promoters incubated either with OC6 or aTC for 210 min. (Right) Histograms of mCherry levels in sender mix (upper) and the mean mCherry values of the sender mix for each pattern (lower).

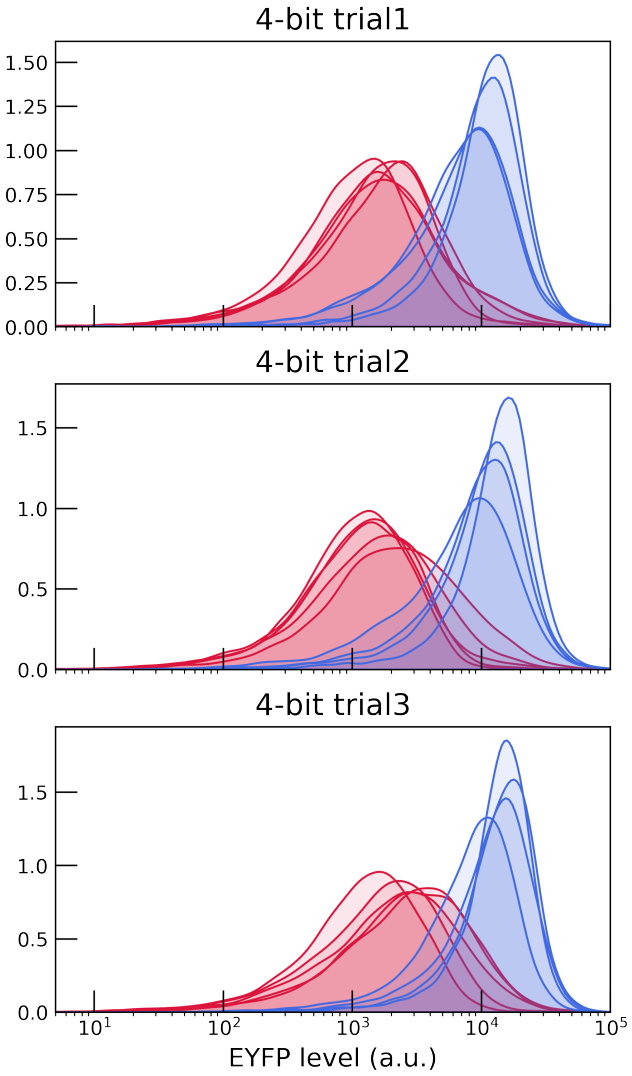

Figure 6: Histograms of EYFP fluorescence levels for receivers in 4-bit patterns as presented in Fig. 3c. Three replicates are presented. Red color represents patterns from 0 to 5, and blue color represents patterns from 6 to 11.

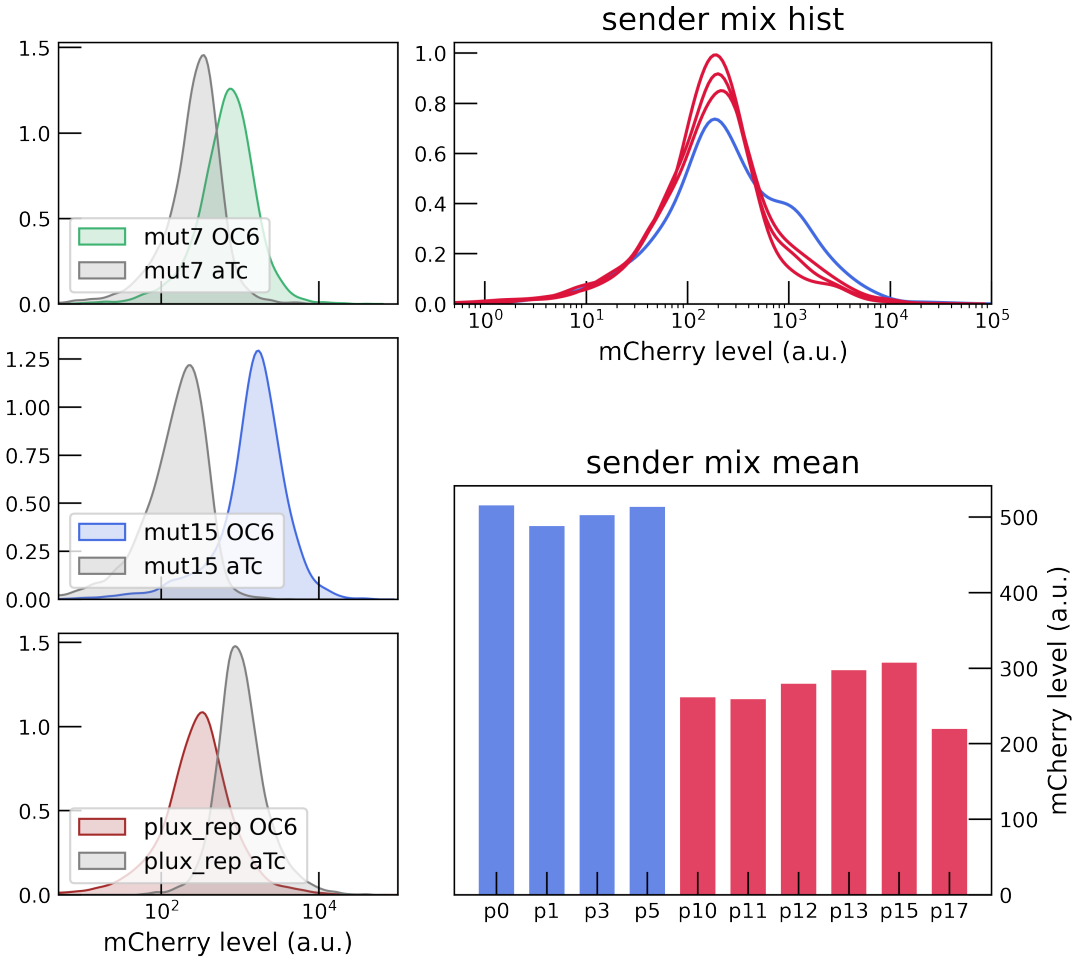

Figure 7: Histograms of mCherry fluorescence measurement for senders involved in one trial of 3×3-bit pattern experiments as presented in Fig. 5c. (Left) Senders with different P_{lux} promoters incubated either with OC6 or aTC for 210 min. (Right) Histograms of mCherry levels in sender mix (upper) and the mean mCherry values of the sender mix for each pattern (lower).

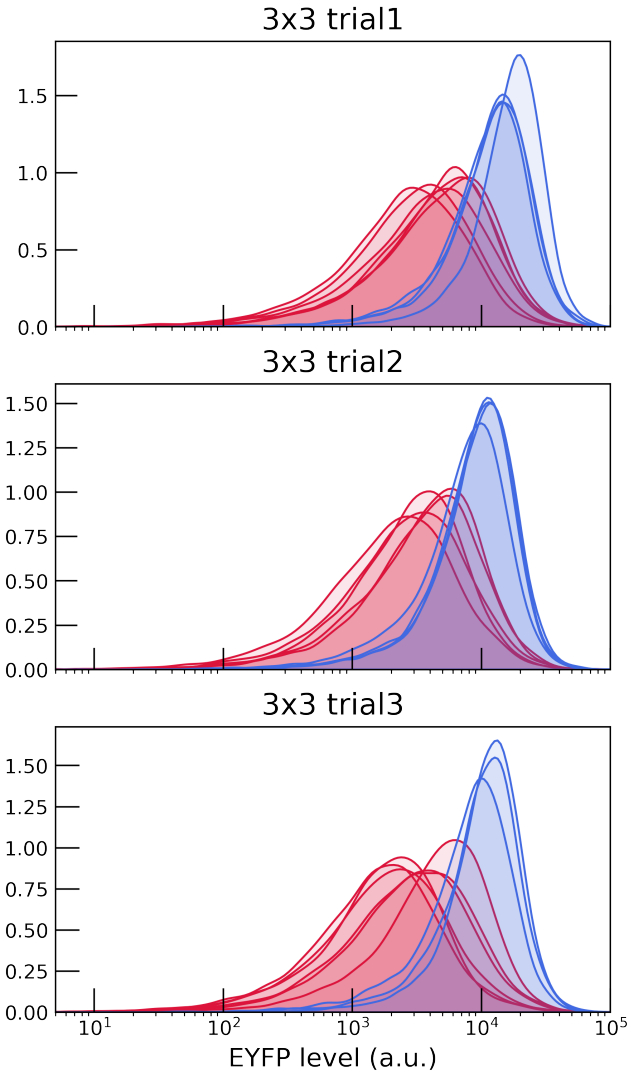

Figure 8: Histograms of EYFP fluorescence levels for receivers in 3×3-bit patterns as presented in Fig. 5c. Three replicates are presented. Red color represents patterns 0, 1, 3 and 5. Blue color represents patterns 10, 11, 12, 13, 15 and 17.