

Title: Supplementary Movie 1.

Description: Time-lapse microscopy of light-induced chromosomal OptoCre-*knt* with promoter P* and RBS R on agarose pads containing 400 µg/mL kanamycin (scale bar = 10 µm). Images show a representative position of the OptoCre-*knt* activation strain without (left) or with (right) blue light. Light is provided by an LED light ring above the microscope stage, and exposure begins immediately after cells are added to antibiotic-containing pads.

Title: Supplementary Movie 2.

Description: Time-lapse microscopy of light-induced p15A plasmid-based OptoCre-*cat* using *cat*_{T172A} with promoter P and RBS R on agarose pads containing 60 µg/mL chloramphenicol (scale bar = 10 µm). Images show a representative position of the OptoCre-*cat* activation strain without (left) or with (right) blue light. Light is provided by an LED light ring above the microscope stage, and exposure begins immediately after cells are added to antibiotic-containing pads.