Operon Promoter Landscape

Operon	Strand	Operon start	Operon end
pykF	+	1753722	1755134

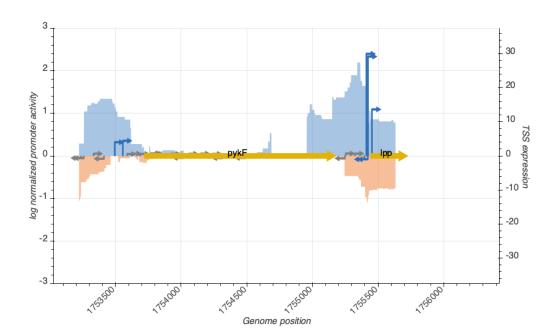




Figure 1: **Promoter activity in rich media (LB) surrounding query operon**. 17,767 previously reported TSSs were evaluated by measuring the promoter activity (right Y-axis) of the 150 bp surrounding the TSS (-120 to +30) to determine which were active or inactive. The genome-wide promoter activity (left Y-axis) was determined by measuring expression of over 300,000 genomic fragments spanning the *E. coli* genome and averaging promoter activity at all nucleotide positions in a strand-specific fashion. Genome coordinates corresponds to *E. coli* genome version U00096.2.

TSS Summary

TSS position	Strand	TSS activity	Category
1753685	+	0.6020523	inactive
1753583	+	0.5393663	inactive
1753491	+	4.0235515	active
1753624	+	0.6318907	inactive
1753408	-	0.8313741	inactive
1753255	-	0.6481360	inactive
1753233	-	0.6318907	inactive
1753552	+	4.4418593	active
1753329	+	0.6620975	inactive
	1753685 1753583 1753491 1753624 1753408 1753255 1753233 1753552	1753685 + 1753583 + 1753491 + 1753624 + 1753408 - 1753255 - 1753233 - 1753552 +	1753685 + 0.6020523 1753583 + 0.5393663 1753491 + 4.0235515 1753624 + 0.6318907 1753408 - 0.8313741 1753255 - 0.6481360 1753233 - 0.6318907 1753552 + 4.4418593

TSS Scanning Mutagenesis

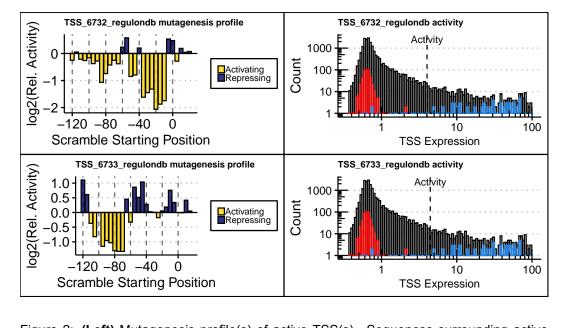


Figure 2: **(Left)** Mutagenesis profile(s) of active TSS(s). Sequences surrounding active TSSs were systematically mutated to identify regions controlling expression. Bar height indicates the relative change in promoter activity as a result of scrambling nucleotides within 10 bp regions at 5 bp intervals spanning the promoter. Bar color identifies the region as a putative activator (yellow) or repressor (purple). **(Right)** Dashed line indicates the expression of the indicated TSS relative to all tested TSS sequences. The distributions of expression is shown for all tested TSSs (black), 500 negative controls (red), and a set of constitutive promoters from the BioBrick registry (blue).