



**Figure 2-figure supplement 1. *E. coli* GapR ChIP-seq.**

- (A) ChIP-seq of GapR-3xFLAG with (orange) and without induction with anhydrous tetracycline (aTc, grey), after rifampicin treatment (rif, pink), and untagged GapR with induction (blue).
- (B) Growth of cells expressing GapR-3xFLAG plasmid or empty vector. Data indicate mean  $\pm$  SEM,  $n = 6$ .
- (C) Transcriptional profiles of cells  $\pm$  GapR-3xFLAG expression.
- (D) Supercoiling-sensitive genes are unaffected by GapR-3xFLAG expression. Log<sub>2</sub>-fold change in expression (rpkm) vs genome order (excluding GapR and poorly expressed genes). Supercoiling-sensitive genes (yellow/blue) and topoisomerase genes (light green). 15 genes that change > 4-fold represent mostly proteins of unknown function or membrane proteins.
- (E) Correlation between two independent GapR-3xFLAG ChIP experiments.
- (F) GapR-3xFLAG ChIP versus AT content in *C. crescentus* (left) and *E. coli* (right). Mean ChIP at a given % AT (red dots). Motif from DREME (below).
- (G) GapR-3xFLAG ChIP profiles. AT content (top), with AT content below the genomic average (50%) plotted in reverse. Normalized ChIP-seq (middle) of GapR-3xFLAG cells that were either untreated (orange) or rifampicin-treated (pink), and untagged GapR expressing cells that were untreated (grey). Transcription from the forward (green) and reverse (blue) strands with annotated genes indicated (bottom).
- (H) Comparison of GapR ChIP at intragenic (purple) or intergenic (green) positions. Student's t-test p-value is reported.
- (I) GapR accumulates at the 3' end of transcription units (TUs). GapR ChIP at 5' (grey) or 3' (orange) ends of TUs normalized by binding within the TU. Student's t-test p-value is reported.
- (J) GapR binding at 3' ends depends on transcription. Transcription-dependent change in GapR ChIP at the 5' (grey) or 3' ends (orange) of TUs normalized by binding within the TU. Student's t-test p-value is reported.
- (K) GapR binding at 5' (top) or 3' (bottom) ends of long TUs normalized by binding within the TU at different expression levels. Student's t-test p-value is reported.
- (L) Histogram showing the length of transcription-dependent GapR binding events.