



Figure 10. Dynamic control of gene expression. (A) Oscillatory dynamics of gene expression. The transition from the silent to active state is shown in a two-dimensional fashion. The rectangle represents the phase of active gene transcription and elongation (transcriptional burst), in which individual vertical bars indicate the number of transcripts generated during the burst. The transcriptional burst is followed by gene silencing. The amount of RNA transcripts produced per burst defines the size of the burst, and the number of bursts per defined time periods (from seconds to hours) corresponds to the burst frequency. (B,C) Genes can be induced in a “digital” (B) or “analog” (C) fashion. The responding or nonresponding cells are shown as closed or open circles, respectively. The graded color of the closed circles reflects differences in gene expression levels.