

GENE REGULATION IN PROKARYOTES

- is most often mediated by regulator proteins that react to environmental signals by raising or lowering the transcription rates of specific genes

Some definitions:

1. **negative regulation:** genes under negative regulation are transcribed *unless* they are turned off by the regulator protein.
2. **positive regulation:** genes under positive regulation are not transcribed *unless* they are turned on by a regulator protein.
3. **constitutive genes:** genes that are expressed continually. Constitutive genes are sometimes called **household genes** since they are expressed in all cells at a low level.
4. **operon:** a unit of bacterial gene expression & regulation; a *cluster* of genes whose expression is controlled by a *single* operator.
5. **induction:** refers to switching on transcription (inducer interacts with the regulatory protein)
6. **repression:** refers to inhibition of transcription by binding of repressor protein to a specific site on DNA