**Molecular Genetics**  
*Are we controlled by our DNA?*

Refer to pg 119-150 in Holtzclaw, Chapters 16-21 in Campbell

Gene Expression

*You must know:*

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* The functions of the three parts of an **operon**
* The role of **repressor genes** in operons
* The impact of **DNA methylation** and **histone acetylation** on gene expression
* The role of gene regulation in embryonic development and cancer

The Operon – p. 131 in Holtz.

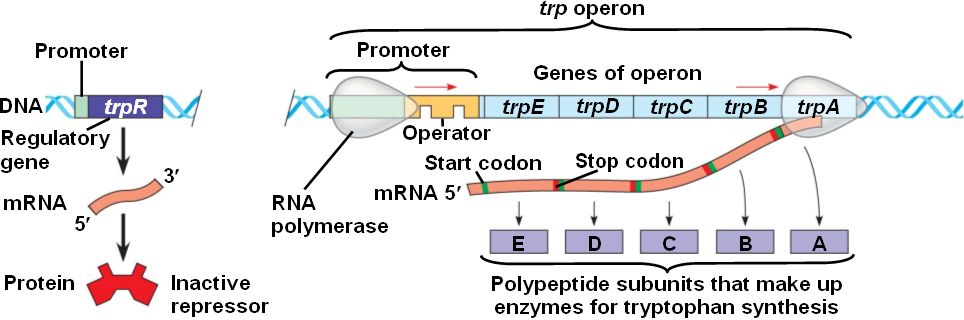
What is it?

* Unit of genetic function
* Found in bacteria/phages/some eukaryotes
* Consists of:

**Promotor –**

**Operator –**

**Genes of the Operon –**



Regulatory Genes

What do they do?

Produce *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*that bind to the operator of an operon to block \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

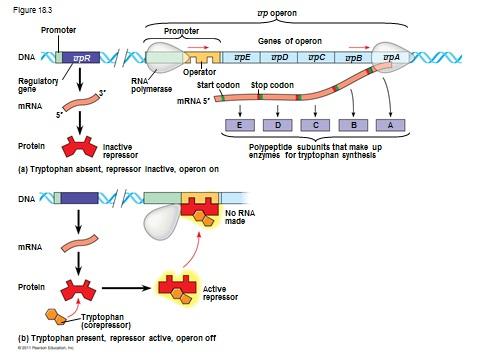
Repressible Operon

Usually “on,” can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Inducible Operon

Usually “off,” can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Trp Operon – Repressible**



**The Lac Operon – Inducible**

