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Sub. Biology

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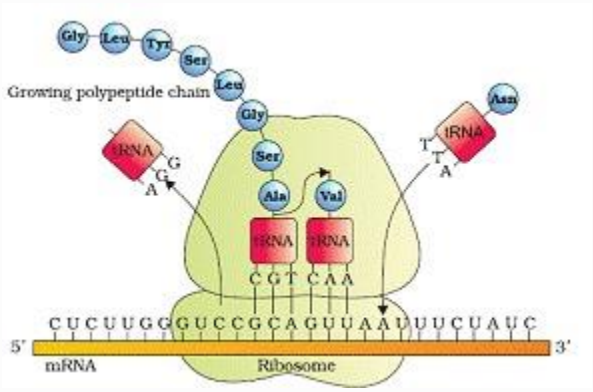
ribosome.

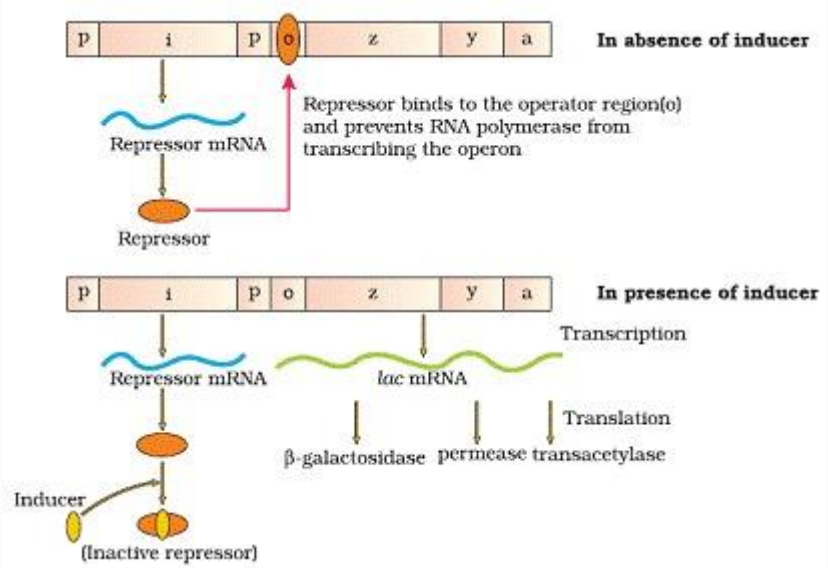


Regulation of Gene Expression:

All the genes are not needed constantly. The genes needed only sometimes are called regulatory genes and are made to function only when required and remain non-functional at other times. Such regulated genes, therefore required to be switched ‘on’ or ‘off’ when a particular function is to begin or stop.

The Lac Operon

Lac operon consists of one regulatory gene (i) and three structural genes (y,z and a). Gene i code for the repressor of the lac operon. The z gene code for beta-galactosidase, that is responsible for hydrolysis of disaccharide, lactose into monomeric units, galactose and glucose. Gene y code for permease, which increases permeability of the cell. Gene a encode for transacetylase.



Lactose is the substrate for enzyme beta-galactosidase and it regulates switching on and off of the operon, so it is called inducer.