Copy of a printed diagram referenced as "General scheme of the regulation of enzyme synthesis"

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Publication/Creation

October 1962

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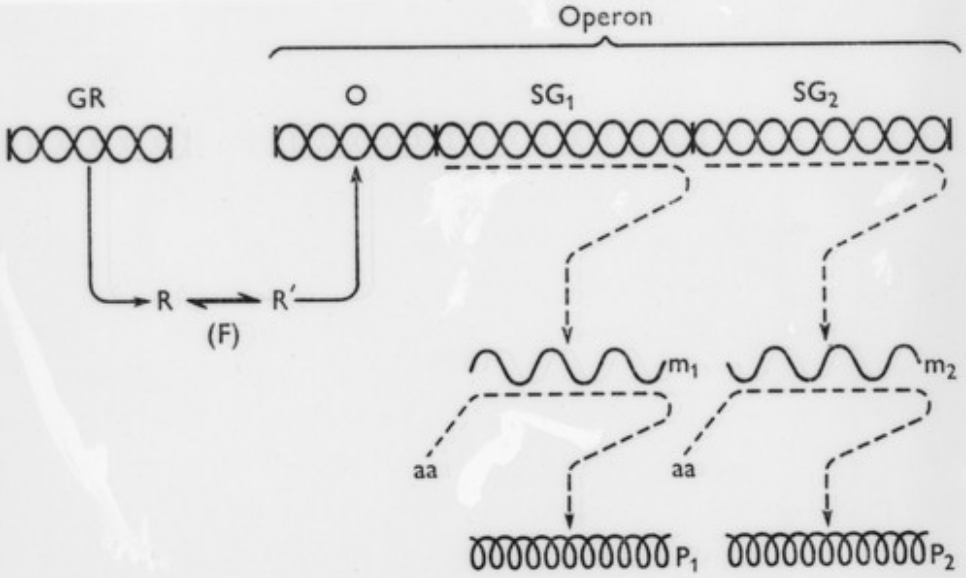
messenger, nor contributes any to the protein. An exception may be the rules governing folding which are assumed to be non-specific.

Returning to the first transcription stage, we now assume that this is a sequential and oriented process which can be initiated only at certain points on the DNA strand. The initiation points or segments are called the 'operators'. In many instances, if not as a rule, the transcription of *several* adjacent genes may depend upon a *single* operator. The genes whose activity is thus co-ordinated constitute an 'operon'.



General scheme of the regulation of enzyme synthesis. GR = regulator gene, O = operator, SG_1, SG_2 = structural genes, m_1, m_2 = messengers made by SG_1 and SG_2, P_1, P_2 = proteins made by m_1 and m_2, R = repressor converted to R′ in presence of effector (F).

Besides structural genes (and operators) the genome is further assumed to involve genes endowed with a different function called 'regulator genes'. The nucleotide sequence of a regulator gene is identical, in part at least, with the specific sequence of an operator.

The regulator also acts by forming an RNA transcript, called the 'repressor', which, by virtue of its nucleotide sequence, tends to associate reversibly with the homologous operator. The question whether the repressor may *also* act as messenger, and synthesize a protein is left open for the moment. This combination blocks the initiation of transcription in the whole operon, and therefore prevents the synthesis of