WHAT IS A PLASMID

Plasmids are small circular pieces of DNA that replicate independently from the host's chromosomal DNA. The plasmid table outlines the common engineerable features of plasmids. Drag and drop the BLUE corresponding description to the vector element. Drag and drop to put together the plasmid map below.

Vector Element	Description
Origin of Replication (ORI)	
Antibiotic Resistance Gene	
Multiple CloningSite (MCS)	
Insert	
Promoter Region	
Selectable Marker	
Primer Binding Site	

Gene, promoter or other DNA fragment cloned into the MCS for further study.

The antibiotic resistance gene allows for selection in bacteria. However, many plasmids also have selectable markers for use in other cell types.

DNA sequence which allows initiation of replication within a plasmid by recruiting transcriptional machinery proteins

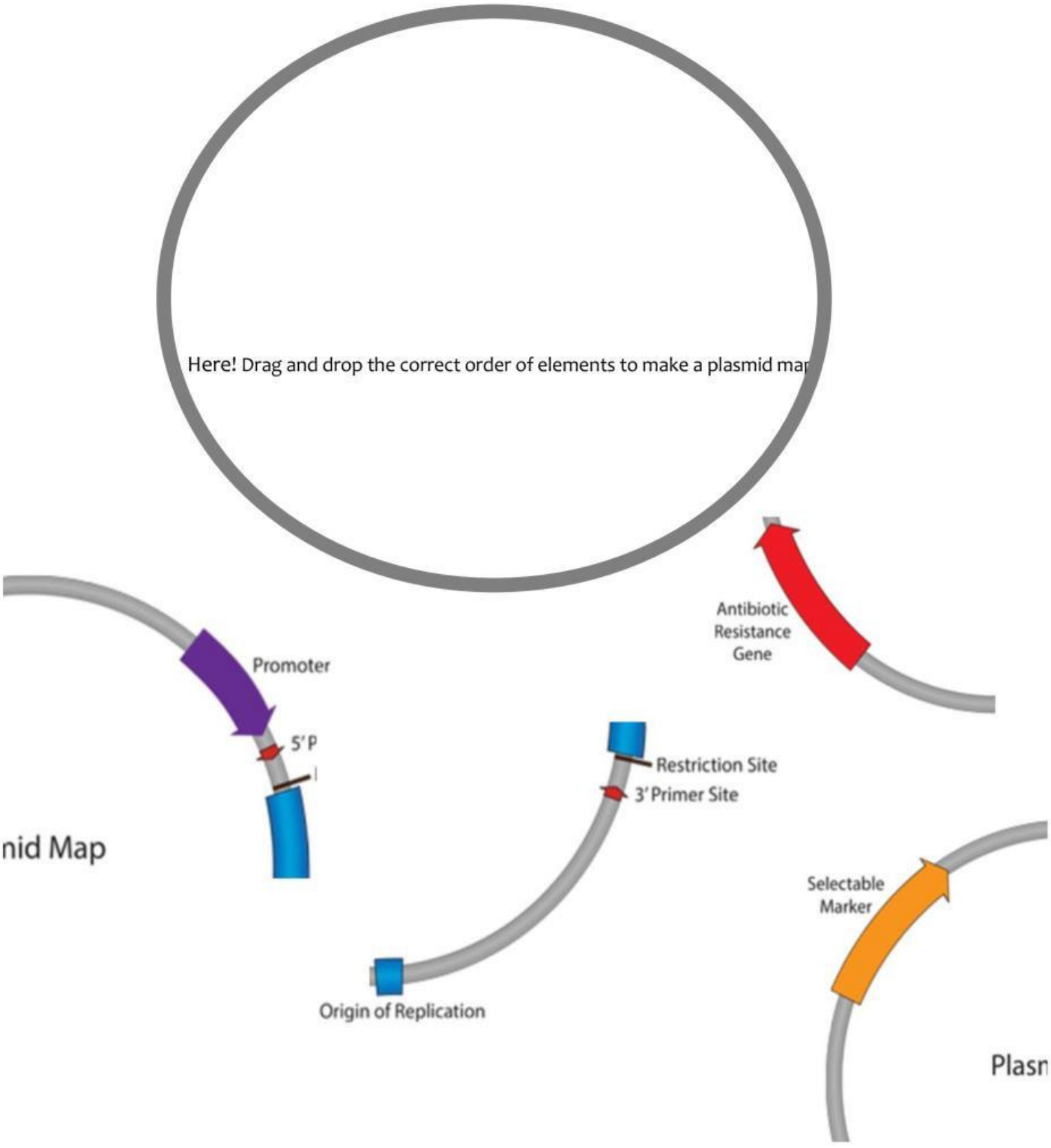
Allows for selection of plasmid-containing bacteria.

Short segment of DNA which contains several restriction sites allowing for the easy insertion of DNA. In expression plasmids, the MCS is often downstream from a promoter.

A short single-stranded DNA sequence used as an initiation point for PCR amplification or sequencing. Primers can be exploited for sequence verification of plasmids.

Allows for selection of plasmid-containing bacteria. Drives transcription of the target gene. Vital component for expression vectors:

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