**Colicinogenic plasmid (col plasmid)**

* There are many bacterial strains that produce [proteinaceous](https://www.newworldencyclopedia.org/entry/Protein) toxins known as *bacteriocin,* which are lethal to other strains of the same [genus](https://www.newworldencyclopedia.org/entry/Genus). The bacteriocin producing genes are present not in [chromosomes](https://www.newworldencyclopedia.org/entry/Chromosome), but in special plasmids known as bacteriocin factor. Bacteriocins have been already isolated from Escherichia *coli* (colicin), *Pseudomonas aeruginosa* (Pyocin), *Bacillus megaterium* (Megacine), and others.
* Toxins secreted by the strains of *E. coli* are called colicins and the plasmid with responsible gene is known as colicinogenic or Col–factor. Several Col–plasmids like Col B, Col E, Col I, Col V have been recognized and they produce different types of colicins. Some of the Col–plasmids are *conjugative* (e.g., Col B, Col V) while others are *non–conjugative* (e.g., Col E) and are non–transmissible by their own means.
* Col plasmids confer to bacteria the ability to produce toxic proteins known as colicines. Such bacteria as [*E. coli*](https://www.microscopemaster.com/e-coli-under-microscope.html), *Shigella* and [*Salmonella*](https://www.microscopemaster.com/salmonella.html) use these toxins to kill other bacteria and thus thrive in their respective environments.
* These toxins affect the target bacteria by affecting such processes as replication of DNA, translation and energy metabolism among others.
* There are different types of Col plasmids in existence that produce different types of colicines/ colicins. A few examples of Col plasmids include Col B, Col E2 and E3. Their differences are also characterized by differences in their mode of action.
* For instance, whereas Col B causes damage to cell membrane of other bacteria (lacking the plasmid) Col E3 has been shown to induce degradation of the nucleic acids of the target cells.
* Like fertility plasmids, some of the Col plasmids have been shown to carry elements that enhance their transmission from one cell to another. Therefore, through conjugation or the mating process, particularly for cells with the F factor (fertility plasmids) the Col plasmids can be transferred from one cell (donor) to another (recipient). As a result, the recipient acquires the ability to produce toxins that kill or inhibit the growth of the target bacteria lacking the plasmid.