Escherichia coli

[Name of the Author]

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Escherichia coli (E.Coli) belongs to a bacterial family of Enterobacteriaceae. It lives in a gastrointestinal tract of humans and other eukaryotes. Most of the strains of E.Coli are harmless, but some cause serious diseases such as food poisoning and diarrhea. Study of E.Coli comes under the bacteriology (a subfield of microbiology) (Lim, Yoon, & Hovde, 2010).

Escherichia coli is an extremely valuable and widely studied model organism. E. coli is usually known to most of the people as an infectious agent, however very few are aware of its versatility. It is widely used as a host for recombinant DNA in research due to its small genome size as compare to human (4,400 genes vs. 30,000 genes). Secondly, under normal growth conditions, E.coli grow much faster with its population doubles after every 20 minutes. This results in a better production rate in fermentation processes. Despite its bad reputation due to one particular strain (O157: H7), Escherichia coli are mostly harmless if handled carefully and with proper hygiene. It is one of the widely studied microorganisms with great knowledge of its mechanism of protein expression and this makes it easy and simple to use in those experiments where foreign protein expression and recombinant selection is required. E Coli can easily grow in a laboratory as 98.6 degree is favorable for its growth which can be easily maintained in a laboratory. An understanding of E. coli natural history can make it possible to study in detail its wild relatives. This can further help to yield new insights into the other microbe biology that experience the same conditions as E.Coli. Secondly this is also helpful in uncovering of new microbiological phenomena.

Most of the population knows about the commensal relationship of Escherichia coli with its host, where it secures a favorable environment and food but it also contributes little in return. E Coli is beneficial to host in many ways such as it produces vitamins (B12 and K) which are needed by mammalian hosts. Secondly, by consuming oxygen it creates a friendly environment for its anaerobic neighbors and it also competitively removes pathogens in the gut (Tsilibaris, Maenhaut-Michel, Mine, & Van Melderen, 2007).

**References**

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