

# ABSTRACT

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**Subject of study:** Healthcare bioanalytics

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**Title:** Pathogenic *Escherichia coli*

**Background:** The aim of this work is to gather basic knowledge about bacteria *Escherichia coli*. The work is mainly focused on pathogenic serotypes of *E. coli*, their virulence factors and symptoms of diseases. The work also deals with laboratory diagnosis options for *E. coli* and treatment and prevention options.

**Main findings:** *Escherichia coli* is a Gram-negative, facultative anaerobic bacterium and a member of the family Enterobacterales. It is common part of the human intestinal microflora, where it produces vitamin K and inhibits the growth of pathogenic bacteria. Some serotypes of *E. coli* are pathogenic and they have the ability to cause intestinal or extraintestinal diseases. Intestinal pathogens cause intestinal infections with diarrhea and they are divided into enteropathogenic (EPEC), enterotoxigenic (ETEC), enterohemorrhagic (EHEC), enteroaggregative (EAEC) and diffusely adherent (DAEC) *E. coli*. Extraintestinal pathogens cause mainly urinary tract infections, neonatal meningitis and sepsis.

**Conclusions:** *Escherichia coli* is important part of the human intestinal microflora. However, some serotypes of *E. coli* are pathogenic and have the ability to cause various disease. These pathogens can be for humans very dangerous.

**Key words:** *Escherichia coli*, pathogenic serotypes, toxins, laboratory diagnostics