

Escherichia coli

Gram reaction and morphology: Gram negative bacillus

Oxygen requirement: Facultative anaerobe

Habitat and human pathogenicity: Part of the human bowel flora. However, certain strains may cause disease in both healthy and immunocompromised individuals. Maladies from *Escherichia coli* may include urinary tract infections, bacteremia, meningitis, and diarrhea. In fact, a large number of urinary tract infections are due to *E. coli*. However, it is the diarrhea that always gets people running scared. There are at least four recognized categories of diarrheagenic *E. coli*. They are: Shiga toxin-producing *E. coli* (STEC) or enterohemorrhagic *E. coli* (EHEC), enterotoxigenic *E. coli* (ETEC), enteropathogenic *E. coli* (EPEC), and enteroinvasive *E. coli* (EIEC). The strain which has become the most “popular” in recent times is *E. coli* 0157:H7. This strain is a serotype of STEC and can be and has been found in raw, uncooked meat. STEC serotypes can cause illness resulting in mild non-bloody diarrhea, severe bloody diarrhea (a.k.a hemorrhagic colitis), or hemolytic-uremic syndrome (HUS), which is characterized by acute renal failure, fever, and thrombocytopenia. Ground beef is a very common source of this serotype, but can also be found in raw milk, sausages, and raw vegetables.

Colony characteristics (on EMB agar plate):

Size	Small to medium
Color	Metallic green sheen with dark centers
Other	Raised, shiny, circular

Biochemical characteristics:

Test	Result
Indole production	(+)
Methyl red	(+)
Voges-Proskauer	(-)
Citrate utilization	(-)
Urease	(-)
Oxidase	(-)