

E. coli (405): sc-57714

BACKGROUND

Escherichia coli is a member of the family *Enterobacteriaceae*, and it is one of the main species of bacteria living in the lower intestines of mammals. *E. coli* is a Gram-negative, rod-shaped, aerobic microbe that is commonly used as a model organism for bacteria in general. The K99 pilus antigen plays a large role in *E. coli* attachment and colonization in the small intestine. *E. coli* is the cause of a wide variety of infections in mammals including urinary tract infections, meningitis, peritonitis, mastitis, septicemia and Gram-negative pneumonia. Because of the important role of *E. Coli* in modern biological engineering, researchers commonly take advantage of this bacteria. *E. coli* can be easily altered to synthesize DNA or proteins, which can then be produced in large quantities using industrial fermentation processes. The *E. coli* strain O157 is one of hundreds of strains of the bacterium *E. coli* that causes illness in humans. O157 produces Shiga-like toxins that cause gastrointestinal illnesses. The *E. coli* K1 strain causes neonatal meningitis by penetrating into the central nervous system.

REFERENCES

1. South, M.A. 1971. Enteropathogenic *Escherichia coli* disease: new developments and perspectives. *J. Pediatr.* 79: 1-11.
2. Tanaka, T., Weisblum, B., Schnös, M. and Inman, R. 1975. Construction and characterization of a chimeric plasmid composed of DNA from *Escherichia coli* and *Drosophila melanogaster*. *Biochemistry* 14: 2064-2072.
3. Joseph, T.A., Pyati, S.P. and Jacobs, N. 1998. Neonatal early-onset *Escherichia coli* disease. The effect of intrapartum Ampicillin. *Arch. Pediatr. Adolesc. Med.* 152: 35-40.
4. Sukumaran, S.K., Quon, M.J. and Prasadarao, N.V. 2002. *Escherichia coli* K1 internalization via caveolae requires caveolin-1 and protein kinase C α interaction in human brain microvascular endothelial cells. *J. Biol. Chem.* 277: 50716-50724.
5. Schultz, C.L., Edrington, T.S., Schroeder, S.B., Hallford, D.M., Genovese, K.J., Callaway, T.R., Anderson, R.C. and Nisbet, D.J. 2005. Effect of the thyroid on faecal shedding of *E. coli* O157:H7 and *Escherichia coli* in naturally infected yearling beef cattle. *J. Appl. Microbiol.* 99: 1176-1180.
6. Teng, C.H., Cai, M., Shin, S., Xie, Y., Kim, K.J., Khan, N.A., Di Cello, F. and Kim, K.S. 2005. *Escherichia coli* K1 RS218 interacts with human brain microvascular endothelial cells via type 1 fimbria bacteria in the fimbriated state. *Infect. Immun.* 73: 2923-2931.
7. Duffy, G., Walsh, C., Blair, I.S. and McDowell, D.A. 2006. Survival of antibiotic O157 and *E. coli* O26 in food matrices. *Int. J. Food Microbiol.* 109: 179-186.
8. Schultz, C.L., Edrington, T.S., Callaway, T.R., Schroeder, S.B., Hallford, D.M., Genovese, K.J., Anderson, R.C. and Nisbet, D.J. 2006. The influence of melatonin on growth of *E. coli* O157:H7 in pure culture and exogenous melatonin on faecal shedding of *E. coli* O157:H7 in experimentally infected wethers. *Lett. Appl. Microbiol.* 43: 105-110.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SOURCE

E. coli (405) is a mouse monoclonal antibody raised against a pool of four *E. coli* serotypes which are associated with human urinary tract infections: O18:B21, O44:K74, O112:B11 and O125:B15.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

E. coli (405) is recommended for detection of *E. coli* serotypes: O2a/2b, O7, O11, O18, O44, O75, O112 and O125 by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.