
1. ABSTRACT

Escherichia coli is the causative agent of both intestinal and extra-intestinal infection. Extra-intestinal infection in man include urinary tract infection (UTI), newborn sepsis and meningitis while in animals is a cause of septicemic colibacillosis and diarrhoea (Gyles, 1994). The role of *E. coli* as a pathogen is well known and many *E. coli* isolates have been associated with a wide variety of diseases. These pathogenic *E. coli* include enteropathogenic *E. coli* (EPEC), enterotoxogenic *E. coli* (ETEC), enteroinvasive *E. coli* (EIEC), enterohaemorrhagic *E. coli* (EHEC) and enteroaggregative *E. coli* (EAaggEC) (Lior, 1994 and Levin, 1987).

It has become clear that only a limited number of *E. coli* strains possessing virulence factors. These factors are usually complex and mainly associated with the capacity of *E. coli* to attach and colonize at the site of infection with elaboration of enterotoxin or by subsequent damage to the host which is promoted by aggresins that interfere with the host defense (Burrows, 1985).

Several virulence factors of *E. coli* are encoded by plasmids (Orskov and Orskov, 1966). Such plasmids often carry gene for antimicrobial resistance. The presence of resistance and virulence plasmids in bacterial cell can lead to the formation of hybrid plasmids (Gyles *et al.*, 1977).

In Egypt, enteric colibacillosis caused by *E. coli* is an important component of the neonatal scour complex in young animals and human





infants. Neonatal coli bacillosis often affect over 50% newborn calves and death rates of 10 to 20% are common (Gyle 1994).

Enteropathogenic strains causing colibacillosis are usually confined to alimentary tract and often harbour conjugative plasmids specifying enterotoxins (Smith and Halls, 1968) and K99 antigen (Orskov and Orskov, 1966) which enhance the pathogenicity.

The interesting goal of this work was to determine virulence determinants of *E. coli* isolates associated with colibacillosis of calves.

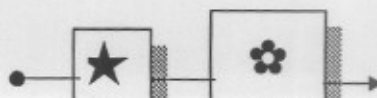
For this purpose the following plan was designed:

1. Isolation and identification of *E. coli* enteric bacterial pathogen from young calves.
2. Comparison between the plasmid profile analysis of obtained *E. coli* isolates as a modern techniques.
3. Detection of the virulence factors such as:
 - a. Enterotoxin.
 - b. Verotoxin.
 - c. Haemolysin production.
4. Identification of K99 antigen.



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