

# Antibiotic Sensitivity Test on *E. coli* Isolates from Different Sources

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**Abstract:** In the present study *E. coli* were isolated from different sources Soil, Urine, Buffalo intestine and Goat intestine. The compare study of isolates with response to three Antibiotic Gentamycin, Erythromycin and Chloromphenicol. Erythromycin and Chloromphenicol were found to be more effective in inhibiting the growth of *E. coli* isolated from urine sample. The maximum zone of inhibition measured for Erythromycin and Chloromphenicol were 33.5 mm and 26.5 mm respectively. The minimum inhibitory effect was found by Erythromycin in soil isolate having diameter of 20mm and Chloromphenicol in Buffalo intestine isolate having diameter of 21mm.

**Keywords:** *E. coli*, Antibiotic sensitivity

## 1. Introduction

The gastrointestinal tract is a biologically diverse and complicated system which contain around 10<sup>14</sup> bacterial cells and up to 1000 species. The microbial population consists of commensurate bacteria and opportunistic pathogen. The normal flora benefit their host is parasitic and some are pathogenic. Diseases that are produced by the normal flora in their host may be called endogenous diseases. Most endogenous bacterial diseases are opportunistic infection. Pathogenicity is the ability to produce disease in a host organism.

*E. coli* is a Gram negative straight rod-shaped measuring 1-3\*0.4-0.7 bacterium arranged singly or in pairs that is commonly found in the lower intestine of warm-blooded organisms. (Ahmed *et. al* 1997; Nataro, *et. al* 1998 and R. Stephan, *et. al* 2008).

## 2. Material & Methods

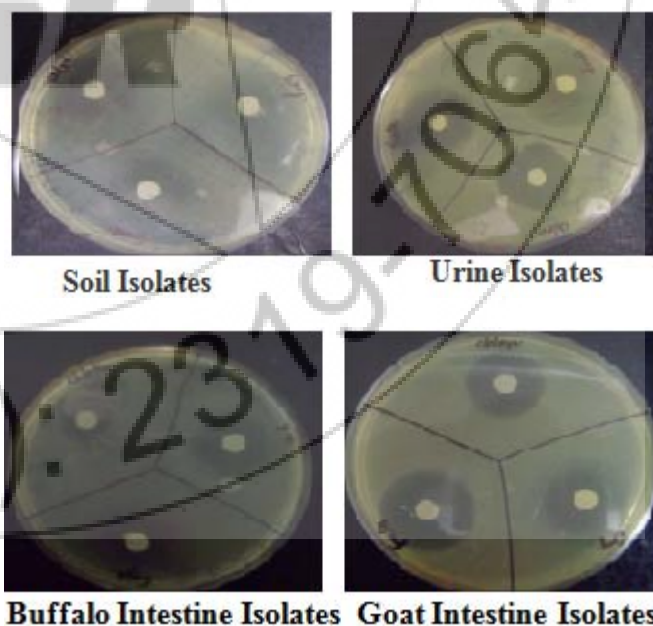
For isolation of *E. coli*, Soil, Urine, Buffalo intestine and Goat intestine sample were collected from Habibganj area (Bhopal) and stored at 20°C until use. *E. coli* were isolated by standard method and identified by Gram staining and some specific biochemical tests. After identification, *E. coli* culture was subjected to antibiotic sensitivity test, for determining its sensitivity against three antibiotics (Gentamycin, Erythromycin and Chloromphenicol. (Alzira, *et. al* 2007 and Beutin, *et. al* 1993)

## 3. Result & Discussion

For the above study *E. coli* was chosen as a model organism. *E. coli* was isolated from four different sources (Soil, Urine, Buffalo intestine and Goat intestine). Also Antibiotic sensitivity test was done to check the effect of Antibiotic on the growth of *E. coli* cells and comparative study of different antibiotics were done. In soil isolate, the maximum inhibition was observed in Chloromphenicol (22.5 mm) and least in Gentamycin & Erythromycin both (20 mm).

Maximum inhibition was observed in Erythromycin (33.5 mm) followed by Chloromphenicol (26.5 mm) in urine isolates while the Gentamycin exhibited least effect (23 mm).

In case of isolates obtained from Buffalo intestine the maximum inhibition observed in Gentamycin (22.5 mm) followed by Erythromycin (22 mm) and Chloromphenicol (21 mm). In goat intestine isolates the maximum inhibition observed in Gentamycin (24 mm) followed by Chloromphenicol (23.5 mm) and Erythromycin (22.5 mm) {Fig1}. The data obtain from study reviles that Erythromycin and Chloromphenicol showed more zone of inhibition in urine isolates. (R. Stephan, *et. al* 2008; Griffin PM 1991, Alf A. *et. al* 1986 and Benenson AS 1995).



**Diagram 1:** Antibiotic Sensitivity test (Gentamycin, Erythromycin, Chloromphenicol)

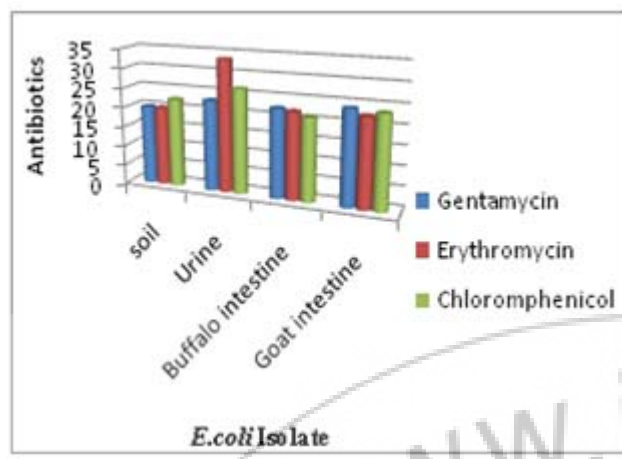


Figure 1: Effect of antibiotic on *E. coli*. Culture Isolated from different Sources

#### 4. Future Aspect

*E. coli* present inside the human beings but when they get favorable condition, they caused sever damaged in human body. *E. coli* infection remains a major public health problem in the developing world and many deaths annually. Lack of research capacity, funding support and institutional infrastructure are problems to promoting and strengthening. *E. coli* infection and other infectious diseases research very few in these region, however this study aim to the diagnostic performance of soil isolates, urine isolates, goat intestine isolates and buffalo intestine isolates for *E. coli* infection in every age of persons. To isolate identify and determine the presences of *E. coli* species from soil sample, urine sample, goat intestine sample and buffalo intestine sample hence the widely depended use of antibiotic sensitivity test by health care personnel poses a challenge to be explored. For this diagnostic further we use antibiotic sensitivity test and got specific antibiotics for the curing of these infection.

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