

Escherichia coli

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ABSTRACT

Twenty *Escherichia coli* strains from faecal samples of broiler chickens and blood, urine and diarrhea samples from humans were isolated and its sensitivity to (13) antibiotics were studied, they showed absolute resistance to two antibiotics, including, Cephalothin and Vancomycin.

It also showed high resistance (50%) for Gentamicin, *Escherichia coli* strains isolated from broilers chickens showed higher resistance for five antibiotics: Nitrofurantion, Nalidixic acid, Chloramphenicol, Kanamycin and Ciprofloxacin than human isolates.

While *Escherichia coli* strains isolated from broilers chickens faecal samples showed lower resistance than those isolated from humans for other five antibiotics: Tetracycline, Cefixime, Trimethoprim, Cefotaxime, Cephalexin

Escherichia coli (20)

Escherichia coli

(13)

Cephalothin, Vancomycin: (%100)

Gentamicin (%50)

... **Escherichia coli**

Nitrofurantion, Nalidixic acid, Chloramphenicol, Kanamycin,
Escherichia coli Ciprofloxacin.

:

. Tetracycline, Cefixime, Trimethoprim, Cefotaxime, Cephalixin

Escherichia coli

Escherichia coli (12) (5)
Urinary tract *coli*
. (1) Pyelone phrities Cystitis infections

Bacterimia Pneumonia Meningitis
Wound infection
. (9, 8) Gastroenteritis

Cellulitis Omphalitis Yolksac infection
Swollen head syndrome
. (11) Colibacillosis Coligranuloma

Escherichia coli

Capsules
(44-18)

. (9)

(7)

Escherichia coli

. (14,3)

Escherichia coli

Escherichia coli

Escherichia coli

Salmonella, Shigella, Yersinia, Vibrio

(7)

Escherichia coli

Escherichia coli (20)
Escherichia coli (10)

3-) (24) (37) Brain heart infusion
Oxoid (2)

(10) .
() *Escherichia coli*
(gram stain) *Escherichia coli*

.(6)

Escherichia :

(15) (2) Kirby-Bauer
(Oxoid) Muller-Hintan Agar
(Oxoid)

.³ / (10⁸)

(24) (37) (5-3)

Escherichia coli (2) (1)
Cephalothin : (%100)
Gentamicin (%50) Vancomycin

... **Escherichia coli**

Gentamicin (10)

Escherichia coli %69

Escherichia coli .(16) Gentamicin

Tetracycline, Gentamicin, Cefixime,
Trimethoprim, Cefotaxime, Vancomycin, Nitrofurantion, Nalidixic acid,
Cephalexin, Chloramphenicol, Cephalothin, Kanamycin, Ciprotfloxacin
(Tn21)

Escherichia coli .(14)

.(10)

Escherichia coli (2)

Nitrofurantion , :

Nalidixic acid, Chloramphenicol, Kanamycin, Ciprotfloxacin.

: (1)

Escherichia coli

						/	
%		%		%			
% 80	8	% 10	1	% 10	1	30	Tetracycline
% 50	5	% 10	1	% 40	4	10	Gentamicin
% 80	8	-	-	% 20	2	5	Cefixime
% 80	8	-	-	% 20	2	5	Trimethoprim
% 100	10	-	-	-	-	30	Cefotaxime
% 100	10	-	-	-	-	30	Vancomycin
% 20	2	% 40	4	% 40	4	300	Nitrofurantion
% 30	3	-	-	% 70	7	30	Nalidixic acid
% 90	9	% 10	1	-	-	30	Cephalexin
% 10	1	-	-	% 90	9	30	Chloramphenicol
% 100	10	-	-	-	-	30	Cephalothin
% 50	5	% 50	5	-	-	30	Kanamycin
% 10	1	% 20	2	% 70	7	5	Ciprotfloxacin

: (2)

Escherichia coli

						/	
%		%		%			
% 70	7	-	-	% 30	3	30	Tetracycline
% 50	5	-	-	% 50	5	10	Gentamicin
-	-	-	-	% 100	10	5	Cefixime
% 70	7	-	-	% 30	3	5	Trimethoprim
-	-	-	-	% 100	10	30	Cefotaxime
% 100	10	-	-	-	-	30	Vancomycin
% 100	10	-	-	-	-	300	Nitrofurantion
% 70	7	-	-	% 30	3	30	Nalidixic acid
% 10	1	% 70	7	% 20	2	30	Cephalexin
% 60	6	-	-	% 40	4	30	Chloramphenicol
% 100	10	-	-	-	-	30	Cephalothin
% 70	7	-	-	% 30	3	30	Kanamycin
% 40	4	% 20	2	% 40	4	5	Ciprofloxacin

E. coli

(14)

E. coli

.(13)

Quinolones

(14) DNA

Escherichia coli

Aminoglycosides

.(4)

Tetracyclin

.(13)

References

- 1) Alain, L. S. (2005). Mechanism by which the disease is thought to be induced: ETEC, EPEC, EHEC, EAEC, DACE, EAEC. *Clinical Microbiology Rev.*, 18:264-292.
- 2) Bauer, A. W.; Kirby, W. A. M.; Sherris, J. S. and Turk, M. (1996). Antibiotics susceptibility testing by a standardized single disk method. *Am. J. Clin. Pathol.*, 45:495-496.
- 3) Caudry, S. D. And Stanish, V. A. (1979). Incidence of Antibiotic Resistant *Escherichia coli* associated with frozen chicken carcasses and characterization of conjugative R-Plasmids derived from such strain. *Antimicrob. Agents Chem other.*, 16: 701-709.
- 4) Galimand, M.; Courvalin, P.; Lambert, T. (2003). Plasmid-Mediated High-Level resistance to amino glycoside in enterobacteriaceae due to 16sr RNA methylation. *Antimicrob. Agents Chem.*, 47:2565-2571.
- 5) Gyles, C. L. (2007). Shigatoxin-producing *Escherichia coli*. *J. Am. Sc.*, 85:45-62.
- 6) Harold, J. B. (2002). "Microbiological Applications Laboratory Manual in General Microbiology. 5th Ed., Prentice-Hill Companies. Inc. USA.
- 7) Iruka, N. O.; Susan, T. F.; Adebayo, L. (2000). Antibiotic resistance in *Escherichia coli* from Nigerian students, 1986-1998. *Emerging Infec. Disea.*, 6:4:393-396.
- 8) James, P. N. and James, B. K.(1998). Diarrheagenic *Escherichia coli*. *Clinical Microbiology Rev.*, 11:1:142-201.
- 9) Jawetz, E.; Melnick, J. L.; Adelberg, E. A.; Geo, F. B.; Janet, S. B.; Karen, C. C.; Stephen, A. M. (2007). Jawetz, Melnick and Adelberg "Medical microbiology". 24th Ed., Prentice-Hill Companies, Inc., USA.
- 10) Lance, B. P.; Jay, P. G.; Leila, G. L.; Amira, R.; Rocio, V.; Ellen, S. (2007). Elevated Risk of Carrying Gentamicin- Resistant *Escherichia coli* Among U. S. Poultry Workers. *Environmental Health Perspectives*. 115:12:1738-1742.
- 11) Roy, P.; Purushothaman, V.; Koteeswavan, A.; Dhillon, A. S. (2006). Isolation, Characterization and Antimicrobial drug resistance pattern of *Escherichia coli* isolated from Japanese Quail and their environment. *J. Appl. Poult. Res.*, 15:442-446.

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- 12) Steven, C. I.; Jill, A. L.; Matthew, P. A.; Jane, E. B.; Jeffry, R. B.; Timothy, M. W. and Thomas, H. W.(2004). *Escherichia coli* Contamination of Vegetables Grown In Soils Fertilized With Nono Composted Bovine Manure: Garden-Scale Studies. *Applied and Environmental Microbial.*, 70(11):6420-6427.
 - 13) Tricia, D. M.; Wayne, M.; Paul, D. B. (2006). Antimicrobial Resistance of *Escherichia coli* isolates from broiler chickens and humans. *BMC Veterinary Research.* 2:7.
 - 14) Vanden Bogaard, A. E.; London, N.; Driessen, C.; Stobberingh, E. E. (2001). Antibiotic Resistance of faecal *Escherichia coli* In poultry, Poultry Farmers and Poultry Slaughteres. *J. Antimicrob. Chem.*, 47:763:771.
 - 15) Vandepitte, J.; Engbreak, K.; Piot, P. And Heuck, C. C. (1991). *Basic Laboratory procedure in clinical bacteriology.* W. H. O., Geneva, P.31.
 - 16) Zhao, S.; Maurer, J. J.; Hubert, S.; Devillena, J. F.; Dermott, P. F.; Meng, J. (2005). Antimicrobial Susceptibility and Molecular Characterization of Avian Pathogenic *Escherichia coli* isolates. *Vet. Microbial.*, 107:215-224.