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Title:

Serotypes and Plasmid Mediated Antimicrobial Resistant of Salmonella Isolated From Milk and other Sources

Abstract:

A total of 287 samples were collected between 20 September 2015 to 5 January 2016 (50 direct milk samples, 50 indirect milk samples, 50 feces samples, 50 teat swabs, 28 hand milkers swabs and 50 stool samples) in Basrah governorate.

The results of this study showed that the overall identification rate of Salmonella spp. isolates according to conventional b iochemical tests was 27/278 (9.7%),while according to each of API 20 E system, serological methods and molecular methods were 17/278 (6.1%).

Serological method revealed that there were 17 serotypes as: Salmonella Typhimurium 5 (29.5%). Salmonella Munchen 4 (23.5%). Salmonella Kentucky 3 (17.6 %). while other isolates like Salmonella Enteritidis, Salmonella Livingstones, Salmonella Braenderup, Salmonella Ohio and Salmonella Hato were 1 (5.8%) for each.

Seventeen isolates of Salmonella spp. which were identified by API 20 E system and serological method were subjected to DNA extraction and PCR assay for detection of 16s rRNA (550bp). Positive results were seen in 17(100 %) of isolates subjected to PCR assay. The highest rate of S almonella spp isolates were in milk samples (direct and indrect), hand swabs and stool samples. While lower rate of Salmonella spp isolates found in teat swabs samples.

The evaluation results of three identification methods Salmonella spp. isolates revealed similarity of results between API 2 0 E test , PCR assay and serotyping (85.2%) for each.

The results of 17 isolates of Salmonella spp. were tested for their antimicrobial susceptibility against 12 antimicrobials agents showed that the highest resistance of Salmonella spp. isolates were against chloramphenicol, vancomycin, lincomycin and rifampin (100%). Whereas the lowest resista nce was against ciprofloxacin (0.0%). Statistical analysis showed that there were high significant differences ($P<0.01$) between antimicrobial agents.

Plasmid curing (by temperature) method showed that seven (41.1%) of total Salmonella isolates were losing their ability to re sist ampicillin, amoxicillin, azithromycin, streptomycin, ceftriaxone and chloramphenicol.

Plasmid analysis by molecular detection shown that eight isolates (47%) were positive for

sul1. Nine isolates (52.9%) were positive for blaCTMX-1, eleven isolates (64.7%) showed positive for blaCMY2, while none of the quinolone gene qnr (A, B and S) was detected in these isolates.