



Benha University  
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# **BACTERIOLOGICAL AND MOLECULAR STUDIES ON GALLIBACTERIUM ANATIS ISOLATED FROM CHICKEN**

**Presented**

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## List of Abbreviations

| ABBREVIATION                   | Word                                       |
|--------------------------------|--|
| <b>AFLP</b>                    | Amplified fragment length polymorphism     |
| <b>AHL</b>                     | Animal Health Laboratory                   |
| <b>BHI</b>                     | Brain heart infusion broth                 |
| <b>bp</b>                      | base pair                                  |
| <b>CFU</b>                     | Colony –forming unit                       |
| <b>dpi</b>                     | Day post infection                         |
| <b>DSA</b>                     | Dextrose starch agar                       |
| <i>fifA</i>                    | Fimbrial protein gene                      |
| <i>G. genomospecies</i>        | <i>Gallibacterium genomospecies</i>        |
| <i>G.melopsittaci</i>          | <i>Gallibacterium melopsittaci</i> ,       |
| <i>G. salpingitidis</i>        | <i>Gallibacterium salpingitidis</i> ,      |
| <i>G. trehalosi-fermentans</i> | <i>Gallibacterium trehalosi-fermentans</i> |
| <i>gtxA</i>                    | <i>Gallibacterium</i> Toxin gene           |
| <i>gyrB</i>                    | <i>DNA gyrase gene</i>                     |
| <b>HIB</b>                     | Heart infusion broth                       |
| <b>IBV</b>                     | infectious bronchitis virus                |
| <b>ITSPCR</b>                  | Internally transcribed spacer PCR          |
| <b>IN</b>                      | Intranasal                                 |
| <b>IV</b>                      | Intravenous                                |
| <b>MIC</b>                     | Minimum Inhibitory concentration           |
| <b>OMVs</b>                    | outer membrane vesicles                    |
| <b>PCR</b>                     | Polymerase chain reaction                  |
| <b>PFGE</b>                    | pulsed-field gel electrophoresis           |
| <b>P.M</b>                     | Postmortem                                 |
| <b>qPCR</b>                    | quantitative PCR                           |
| <b>RTX (<i>gtx</i>)</b>        | Repeat In Toxin gene                       |
| <b>SPF</b>                     | specific pathogen free                     |
| <i>tetH</i>                    | Tetracycline Resistance Determinant H gene |

## V. Summary

*G.anatis* is one of the most important pathogens that affects the poultry industry leading to economic losses and decrease egg production.

In the present study *G.anatis* isolated from El-Gharbia Governorate and the results were summarized as the follows:

- 4- *G.anatis* were recovered in 8 samples with an incidence rate 16 % (8 out of 50) from laying hens after bacteriological isolation .
- 2- *G.anatis* were recovered in 11 samples with an incidence rate 9.16% (11 out of 120) from broilers chickens after bacteriological isolation.
- 3-The rate of recovery of *G.anatis* from the different internal organs showed that high recovery rate was from 62.5% from oviducts, 25% from ovaries and 12.5% from trachea in layer chickens.
- 4-The rate of recovery of *G.anatis* from the different internal organs showed that high recovery rate was 63.63 % from trachea, 27.27% from lungs and 9.09% from liver in broilers chickens.
- 5- The isolates were subjected to PCR for confirmation, where only 4 (8%) of isolates from laying hens and 3 (2.5%) of isolates from broilers chickens were positive for *16S rRNA* *23S rRNA*
- 6- *G.anatis* isolates were highly sensitive to gentamicine, cefotaxime, ciprofloxacin and sulpha. trimethoprim, while moderate sensitive to enrofloxacin and amoxicillin with clavulanic acid.
- 7- On the other hand all isolates were complete resistant to oxytetracyclin and doxycycline.
- 8- Molecular characterization of resistance genes revealed (100%) detection of *tetH* in all tested laying and broilers strains

- 9- Molecular characterization of virulence genes revealed (100%) detection of *gtxA* and *gyrB* genes, while none detection of *fifA* gene in all tested strains from laying hens.
- 10- Molecular characterization of virulence genes revealed (100%) detection of *gyrB* genes, while no detection of *fifA* and *gtxA* gene in all tested strains isolated from broilers.