**Oral Presentation**

**DEVELOPMENT OF REAL-TIME LOOP-MEDIATED ISOTHERMAL AMPLIFICATION ASSAY TARGETING *mgc2* GENE OF *Mycoplasma gallisepticum***

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**Abstract**

**Introduction:** *Mycoplasma gallisepticum* (MG) is considered as important pathogenic and economically significant avian *Mycoplasma spp*. for worldwide poultry industry. The aim of this study was to develop a novel and sensitive real-time Loop-mediated isothermal amplification (LAMP) based on the amplification of (cytadhesin protein) *mgc2* gene sequence of MGfor its rapid molecular detection in chickens*.* **Materials and methods:** Sera samples from 300 broiler and layer chickens were screened using Rapid Serum Agglutination (RSA) test. Real-time LAMP reaction was performed by collecting swab samples from seropositive birds at 60оC for 90 min in ESEQuant tube scanner (Qiagen, USA). FAM (6-carboxyfluorescein) was used as reporting dye in Real-time LAMP. **Results:** The sensitivity of developed assay was noted as 10 fg/µL of DNA. The assay was found 100% specific showing no cross-reactivity with other avian *Mycoplasma* species. The percentage of the positive samples was found as 58% as detected through real-time LAMP. In comparison, the performed RSA was found to detect only 52% positive cases. **Conclusion:** The established *mgc2* real-time LAMP was proved to be more sensitive and simple method for molecular detection of MG. Being a robust and precise method, it is a potential field diagnostic tool in national MG control programs for poultry industry. The study will be beneficial to reduce the economic losses caused by MG in poultry industry by adopting molecular diagnosis. This is the first report on development of real-time LAMP assay based on the amplification of *mgc2* gene sequence using ESEQuant tube scanner for the detection of MGin chickens.

**Key words:** Real-timeLAMP, *Mycoplasma gallisepticum*, *mgc2* gene, poultry