

Determination of testicular estrogen receptor α expression of male chickens (*Gallus Domesticus*) with age

^{1,2*}Nirmali WKR, ¹Warnakula L, ¹Cooray R, ¹Hapuarachchi NS and ²Magamage M

¹Section of Genetics, Institute for Research and Development, Colombo, Sri Lanka;

²Laboratory of Reproductive Biology and Biotechnology, Department of Livestock production, Sabaragamuwa University, Sri Lanka

*Corresponding author: rameshanirmali@ymail.com

Estrogen activity within living cells is regulated by its receptor, estrogen receptor α (ER α) and estrogen receptor β (ER β) in chickens as in many other species. ER α expresses predominantly in embryonic gonads of both sexes prior to gonadal differentiation and gradually diminished in males while continuously expressed in females which highlighting the role of ER α in ovarian development. Although estrogen is proved to be important in post hatching development of male reproductive organs, the post-hatching expression of estrogen receptors in male testis has not been studied adequately. Therefore, the current research was conducted to determine the post-hatching changes in the expression of ER α in the left gonads of the male chickens with age. Shaver brown commercial layer male chickens were raised and cared according to the management guide and sacrificed at the intervals of 1, 4 and 8 weeks of age. Total RNA was extracted from the left gonads using the trizol method and followed by reverse transcription of ER- α gene using a pair of gene specific primers. Following the PCR amplification, the relative quantification of the ER- α expression was performed relative to the expression of reference gene GAPDH using semi quantitative RT-PCR method. Data were analyzed using Statistical Analysis Software (SAS 9.0 Version). The relative ER α expression in left gonad at 1st week (0.6546) was significantly lower when compared to 4th week (1.3383) and 8th week (1.8723) with p Values of 0.0133 and 0.0011 respectively. The week 8 expression was significantly higher than the week 4 expression (p=0.0220) and hence showed an overall increment of ER- α expression with the age at the p value of 0.0032. In conclusion, the post-hatching ER α expression of the left gonads of male chick's increases with the age and it may supports their reproductive functions at later stages of their life.

Keywords: Estrogen receptor α , *Gallus Domesticus*, Testicular