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Age-related changes in mitochondrial UCP, ANT and COX III gene expression in the breast muscle of quails (*Coturnix coturnix japonica*)

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ABSTRACT. Efficient conversion of food into body mass has been associated with altered gene expression of some proteins of the electron transport chain. We evaluated the effect of age on mRNA expression of uncoupling protein, adenine nucleotide translocase and cytochrome c oxidase complex III in quails. One-day-old broiler quails were sacrificed after 7, 14, 21, or 28 days. Six quails of each age were slaughtered by cervical dislocation. Total RNA was extracted from the breast muscle and reverse transcribed into cDNA. Real-time PCR analysis was performed using specific primers for the genes. As the quails aged, there was reduced expression of all three genes. The greatest reduction when comparing 7- and 28-day-old birds was observed in the uncoupling protein mRNA levels (67%), followed by adenine nucleotide translocase (56%) and cytochrome c oxidase complex III (30%). We conclude that expression of some mitochondrial genes of the

electron transport chain changes with age in quails.

Key words: Oxidative damage; Aging; Mitochondria; UCP; ANT; COX III

