



## Dietary methionine effects on IGF-I and GHR mRNA expression in broilers

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**ABSTRACT.** This study aimed to evaluate liver and breast muscle insulin-like growth factor I (IGF-I) and growth hormone receptor (GHR) gene expression between broilers fed different methionine levels and sources. Broiler chicks were 22 to 42 days old, distributed in 5 treatments (control diet, DL1 - 0.08% DL-methionine, DL2 - 0.24% DL-methionine, MHA-FA1 - 0.11% methionine hydroxy analogue-free acid, and MHA-FA2 - 0.33% methionine hydroxy analogue-free acid). The broilers were euthanized by cervical dislocation. RNA was extracted from liver and breast muscle, followed by cDNA synthesis and amplification using qRT-PCR. DL2 methionine supplementation provided best animal performance results. GHR and IGF-I gene expression in the muscle tissue was not affected by methionine supplementation. IGF-I gene expression in the liver was higher in animals fed methionine supplementation than in animals fed control diet. IGF-I mRNA levels in broilers fed DL2 were greater than DL1 (1.56 vs 0.97 AU) and greater than MAH-FA1 and MAH-FA2. Broilers

fed DL2 increased significantly GHR gene expression in the liver than animals fed the control diet. Addition of methionine improved animal performance by stimulating synthesis and release of growth factor.

**Key words:** Broiler; Growth hormone receptor; Methionine; Insulin-like growth factor I