Keerati Jirawajanya 2009: Study of Nucleotide Sequence and Tissue Expression of Leptin and Its Receptor in Thai Native Chicken (*Gallus gallus domesticus*). Master of Science (Animal Physiology), Major Field: Animal Physiology, Department of Physiology. Thesis Advisor: Assistant Professor Ukadej Boonyaprakob, Ph.D.
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Leptin, a multifaceted protein hormone, provides multiple physiological activities including food intake, growth, reproduction and especially energy stabilization. In chicken, the cDNA sequence of leptin and its receptors have been reported but the correction of the sequence of chicken leptin is still unclear. In this study, we aimed to clone and sequence of leptin and its receptor gene in Thai native chicken. Amplification of chicken leptin sequence was failed, although its expression consistently obtained in the mouse cDNA templates with the same primers. However, the chicken LEPR cDNA has been cloned, sequenced and characterized. The predicted 1,148 amino acids of the Thai chicken LEPR shares 99% sequence identity at both the nucleotides and amino acids level with the long form of LegHorn chicken LEPR. The Thai chicken LEPR has a predicted molecular weight of 129 kDa, containing two WSXWS motifs in the extracellular region, a single transmembrane domain, and the conserved box 1, 2 and 3 motifs in the cytoplasmic region. In addition, LEPR gene expression was observed in hypothalamus, adipose tissue, lung, liver, pancreas, intestine, cardiac muscle, skeletal muscle, kidney, testis and ovary.

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