

[BIO27]

Molecular characterization of peroxisome proliferator activated receptor gamma2 (PPAR γ 2) promoter from bovine

Ida Shazrina Ismail, Yahya Mat Arip, Tengku Sifzizul Tengku Muhammad

School of Biological Sciences, Universiti Sains Malaysia, 11800 Penang, Malaysia

E-mail: ida_s_78@yahoo.com

The peroxisome proliferator activated receptors (PPARs) are important subfamily of the nuclear hormone receptor (NHR) superfamily. These ligand-activated transcription factors have been intensively studied for over a decade and have been implicated in such diverse pathways as lipid and glucose homeostasis, control of cellular proliferation and differentiation. There are three PPAR subtypes, which are the products of distinct genes and are commonly designated as PPAR α , PPAR β and PPAR γ . PPAR γ is highly expressed in adipose tissue and plays pivotal role in adipogenesis, lipogenesis and immune system. PPAR γ plays an important role in regulating the level of fat production in animals. Therefore, it is vital to carry out a study on bovine PPAR γ gene because of its economic value. In this study, bovine PPAR γ 2 promoter with the size of 1.1 kb was successfully cloned using GenomeWalking technique. RLM-RACE identified two putative transcriptional start sites which located at 173bp and 143bp upstream the start codon of the gene, respectively. Several potential *cis*-acting elements, which may involve in regulating the expression of PPAR γ 2 in bovine, were also identified. In addition, transient transfection analysis demonstrated the presence of transcriptional activities in various promoter fragments, proving that the cloned promoter is a functional promoter.