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ROLE OF PPAR-γ IN HEALTH AND DISEASE

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ABSTRACT

Peroxisome proliferator-activated receptors (PPARs) are ligand activated transcription factors that modulate target gene expression in response to endogenous and exogenous ligands. The PPARs, a family of nuclear receptors (NRs), are a set of three receptor sub-types encoded by distinct genes. The discovery of PPAR-specific ligands has led to a significant advancement in our understanding of the structure of these receptor proteins and molecular mechanisms of their ligand dependent activation. The nuclear receptor peroxisome proliferator-activated receptor (PPAR)-γ is a crucial cellular and metabolic switch that regulates many physiologic and disease processes.

Keywords: PPAR-gamma; inflammation; adipose tissue; insulin sensitivity; cancer

INTRODUCTION

The peroxisome proliferator activated receptors (PPARs) are ligand-inducible transcription factors belonging to superfamily of nuclear harmone receptor (NHR) containing 48 members [1]. These receptors are identified in the 1990 in rodents. These receptors are named because of its property of peroxisome proliferation. NHR also includes other members such as retinoic acid receptors (RARs), the thyroid hormone receptors (TRs) and the steroid receptors [1, 2]. But, these agents are associated with no proliferation in the humans. Structurally, PPARs are similar to steroid or thyroid hormone receptor and are stimulated in response to small lipophillic ligands.

ISOFORMS OF PPARS

Three subtypes of PPARs, classified as PPAR-α (NR1C1), PPAR-β/δ (NR1C2) and PPAR-γ (NR1C3), encoded by separate genes, were cloned