

Editorial

PPARs and Bone Metabolism

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Welcome to the inaugural *special* issue of *PPAR Research: PPARs and Bone Metabolism*. In addition to the key roles PPARs play in numerous processes including glucose and fat metabolism, inflammation, cancer, and central nervous system maintenance, a new role for PPAR- γ has recently emerged: the maintenance of bone homeostasis during aging and disease. In this premier issue we have assembled what is close to a comprehensive overview of the role of PPAR- γ in the control of bone maintenance. This takes into account PPAR- γ 's role in mesenchymal stem cell lineage allocation, possible cross-talk with relevant nuclear receptors, examination of PPAR- γ gene polymorphisms and bone mineral density in humans, a role of PPAR- γ in bone loss due to skeletal disuse, evidence that human bone is vulnerable to antidiabetic therapies with PPAR- γ agonists, the thiazolidinediones, and evidence that the antiosteoblastic activity of PPAR- γ can be separated from its proadipocytic and antidiabetic activities by using selective modulators. We also present a novel hypothesis that PPAR- γ acts as a regulator of chondrocyte development and cartilage homeostasis. We realize that we have not covered all aspects of PPARs involvement in the control of bone maintenance; however, this introduction should serve as a competent first attempt to present these new aspects of bone biology to the broader audience of our readers.

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