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SPOTLIGHT

Articles of Significant Interest Selected from This Issue by the Editors

Liver X Receptor Signaling Is Important for Transcriptional Regulation of Dendritic Cell Chemotaxis

Dendritic cells (DCs) are professional phagocytes that capture antigens and travel to lymphoid organs, where they initiate immune responses. The transcriptional cascades that control DC activation and migration are not fully elucidated. Liver X receptor (LXR) nuclear receptors are crucial regulators of lipid metabolism with important functions in inflammation. Beceiro et al. (e00534-17) identify an LXR-dependent pathway required for the efficient migration of DCs. Using LXR gain- and loss-of-function approaches, they show that LXRs facilitate DC migration via transcriptional regulation of CD38, an ectoenzyme that regulates CCR7-dependent chemokine signaling. This study advances our understanding of the regulatory circuits that control DC maturation and migration.

Peroxisome Proliferator-Activated Receptor γ and Its Role in Adipocyte Homeostasis and Thiazolidinedione-Mediated Insulin Sensitization

Peroxisome proliferator-activated receptor γ (PPARγ) is the master regulator of adipogenesis and has been considered critical for maintaining mature adipocyte function. Wang et al. (e00677-17) utilized an adipocyte-specific, inducible knockout system to explore the role of PPARγ in mature adipocytes. PPARγ-deficient adipocytes were viable in chow-fed mice but underwent rapid cell death in high-fat-diet-fed mice. Depletion of both PPARγ and C/EBPα (another critical adipogenic factor) in adipocytes led to rapid cell death even on a chow diet. Surprisingly, the insulin-sensitizing effect of thiazolidinediones (TZDs) did not require PPARγ in adipocytes, suggesting alternate mechanisms of PPARγ/TZD action on whole-body metabolic homeostasis.

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