

Conditional gene targeting using UCP1-Cre mice directly targets the Renal Medicine

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Abstract

Adipose tissues maintain systemic energy homeostasis through the storage and release of lipids and adipokines and contribute to whole-body metabolic rate. Within adipose tissues, there are at least three different types of adipocytes: white, beige/brite, and brown. White adipocytes have a unilocular appearance and function to store energy. In contrast, brown adipocytes dissipate energy as heat through a process known as adaptive thermogenesis and histologically have a multilocular phenotype. Brown adipocytes produce heat by utilizing glucose and lipids, which results in increased energy expenditure. This is accomplished by uncoupling protein 1 (UCP1), a protein localized to the mitochondrial inner membrane which uncouples proton transport across the inner mitochondrial membrane from the electron transport chain, leading to release of chemical energy as heat. Beige or brite (brown in white) adipocytes phenotypically appear like white adipocytes, but when activated, they have the capacity to increase UCP1 expression and thermogenesis and obtain a multilocular appearance.

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Biography

Dr. Matthew J. Potthoff is affiliated to Department of Pharmacology, University of Iowa Carver College of Medicine, Iowa City, IA Fraternal Order of Eagles Diabetes Research Center, University of Iowa Carver College of Medicine, Iowa City, IA, where Dr. Matthew J. Potthoff is currently working as Professor. Dr. Matthew J. Potthoff has authored and co-authored several national and international publications and also working as a reviewer for reputed professional journals. Dr. Matthew J. Potthoff is having an active association with different societies and academies around the world. Dr. Matthew J. Potthoff

made his mark in the scientific community with the contributions and widely recognition from honourable subject experts around the world. Dr. Matthew J. Potthoff has received several awards for the contributions to the scientific community. Dr. Matthew J. Potthoff major research interest involves Dr. Department of Pharmacology, University of Iowa Carver College of Medicine, Iowa City, IA Fraternal Order of Eagles Diabetes Research Center, University of Iowa Carver College of Medicine, Iowa City