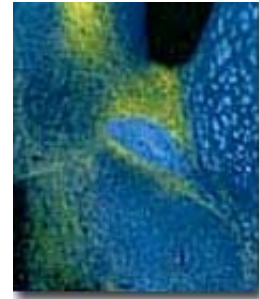




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Research Interests

The hormone leptin signals the body, nutritional and metabolic status to the brain to regulate glycemic control, energy balance, and neuroendocrine function. Leptin acts via the long form of its receptor (LRb) to regulate numerous distinct populations of neurons in the hypothalamus and elsewhere in the brain. Each different set of LRb-expressing neurons serves a different function, and the totality of leptin action requires the coordinated response of all LRb neurons. While my original background is in the molecular mechanisms of intracellular LRb signaling, our focus includes the study of the neural mediators of leptin action, since it is not possible to understand the regulation of metabolism and endocrine function without understanding the neurophysiologic as well as molecular basis of leptin action. Thus, in addition to examining the molecular details and importance of specific LRb signals, we are dissecting the regulation and function of individual populations of LRb-expressing neurons and examining the role of leptin in the development of neural circuits. By understanding the totality of leptin action in this way we hope to decipher the mechanisms by which leptin regulates the predisposition to diabetes and other aspects of the metabolic syndrome.

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