
Gene Expression and the Control of Food Intake by Hypothalamic POMC/CART Neurons

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Abstract: Neurons that express pro-opiomelanocortin (POMC) and cocaine- and amphetamine-regulated transcript

brains, and may or may not be directly applicable to mouse models, which are the subject of more recent genetic studies. As one example, POMC neurons are located both medially

PC1/3 gene transcription. STAT3 and Nhlh2 interact as a heterodimer on the PC1/3 promoter to mediate leptin-stimulated PC1/3 expression [103]. Thus, Nhlh2 acts cooperatively with STAT3 to induce PC1/3 expression following leptin stimulation.

Both androgens and estrogens have been found to affect POMC gene expression [104, 105]. For example, ovariectomy decreases POMC mRNA in the ARC [106], and this regulation is reversed by a short term replacement of estradiol [106]. Such nuclear steroid hormone receptors regulate the transcription of target genes by interacting with DNA

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