Expression of Preproghrelin

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references

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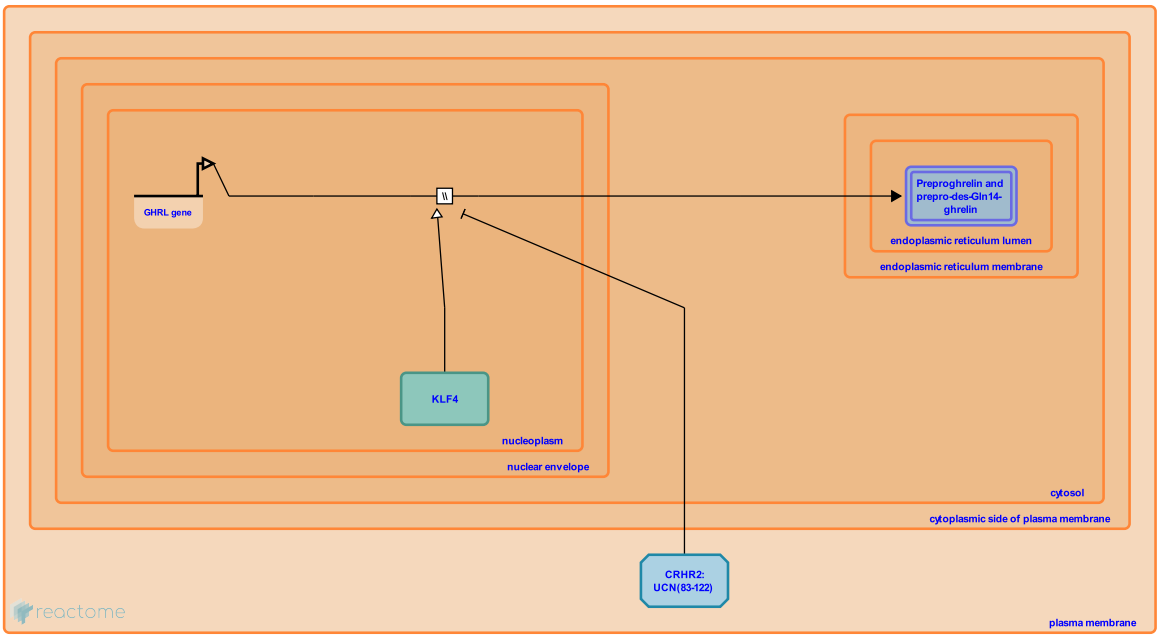
Expression of Preproghrelin ↗

Stable identifier: R-HSA-422088

Type: omitted

Compartments: nucleoplasm, endoplasmic reticulum lumen



As inferred from rat homologues, Urocortin (UCN) binds the CRHR2 (CRF2) receptor and reduces levels of preproghrelin mRNA in the gastric body, causing reduced secretion of ghrelin (Yakabi et al. 2011).
The ghrelin gene is transcribed and spliced to yield two variants: isoform 1 encodes full-length preproghrelin and isoform 2 encodes des-acyl-Gln14 preproghrelin, which is missing glutamine at position 14 of the mature peptide. Des-acyl-Gln14 ghrelin is found in rodents but is present in negligible quantities in humans. Somatostatin and leptin inhibit ghrelin mRNA levels. Estrogen increases ghrelin mRNA levels. The KLF4 transcription factor binds the ghrelin promoter and activates transcription. Putative binding sites for other transcription factors have been identified but their functions have not been demonstrated.

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Editions

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