

Synthesis of Preproglucagon in intestinal L cells

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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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Reactome database release: 88

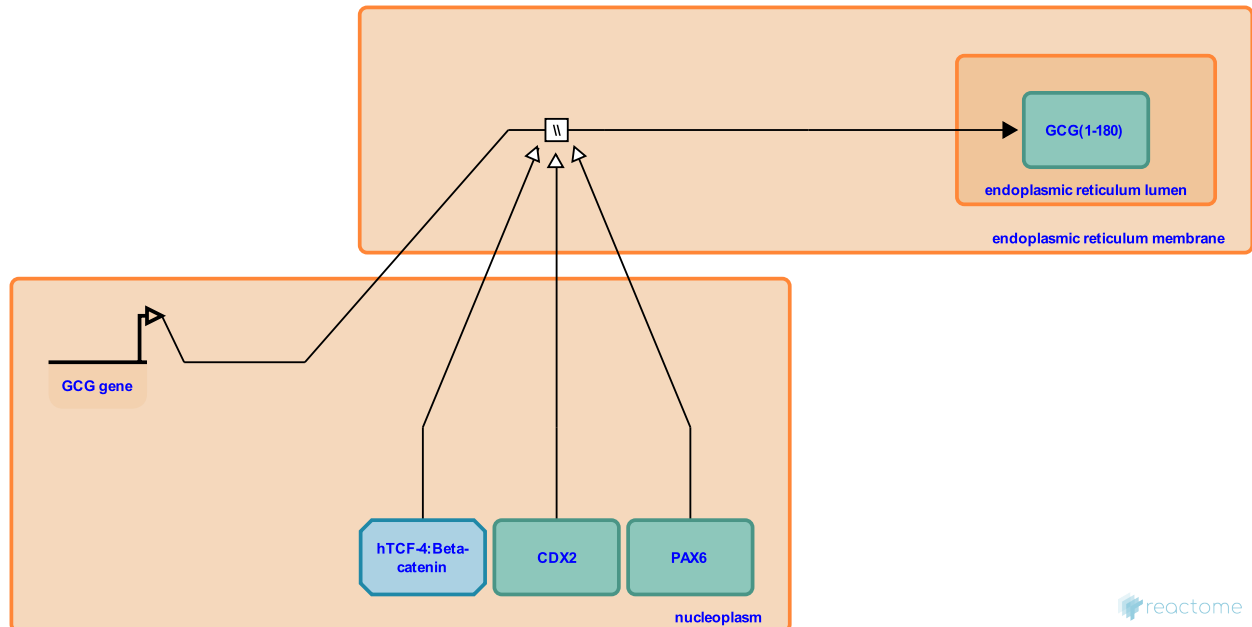
This document contains 1 reaction ([see Table of Contents](#))

Synthesis of Proglucagon in intestinal L cells [↗](#)

Stable identifier: R-HSA-381799

Type: omitted

Compartments: cytosol, endoplasmic reticulum membrane, endoplasmic reticulum lumen



TCF-4 and Beta-Catenin form a heterodimer that binds the G2 element of the promoter of the Proglucagon (GCG) gene in L2 cells of the intestine. CDX-2 binds an AT-rich sequence in the G1 enhancer element of the GCG promoter. Transcription of the GCG gene is enhanced by cAMP, calcium, and insulin and the Beta-Catenin:TCF-4 binding region of the promoter is necessary for this regulation. It is therefore postulated that the Wnt signaling pathway (Beta-Catenin) crosstalks with the cAMP-PKA pathway and/or the cAMP-EPAC pathway. Beta-catenin:TCF-4 bound at the promoter of the GCG gene recruits RNA polymerase II. This regulation is inferred from experiments in mouse and rat cells.

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Editions

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