

XPO1:BACH1:Hemes are transported out of the nucleus

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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: 77

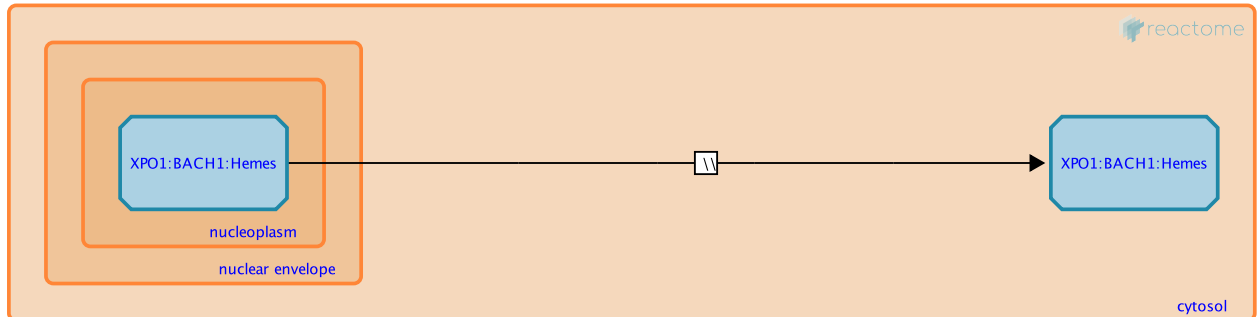
This document contains 1 reaction ([see Table of Contents](#))

XPO1:BACH1:Hemes are transported out of the nucleus ↗

Stable identifier: R-HSA-9708423

Type: omitted

Compartments: cytosol, nucleoplasm



Heme regulates transcription by affecting the nucleocytoplasmic shuttling of nuclear protein. Inhibition of heme synthesis enhances the nuclear accumulation of BACH1, whereas treating cells with hemin results in nuclear exclusion of BACH1. A specific region on BACH1 functions as a heme-regulated NES dependent on the exporter Crm1 (XPO1) (Suzuki et al, 2004).

Literature references

Suzuki, H., Tashiro, S., Hira, S., Sun, J., Yamazaki, C., Zenke, Y. et al. (2004). Heme regulates gene expression by triggering Crm1-dependent nuclear export of Bach1. *EMBO J*, 23, 2544-53. ↗

Editions

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