RNase P cleaves the 5' end of pre-tRNA

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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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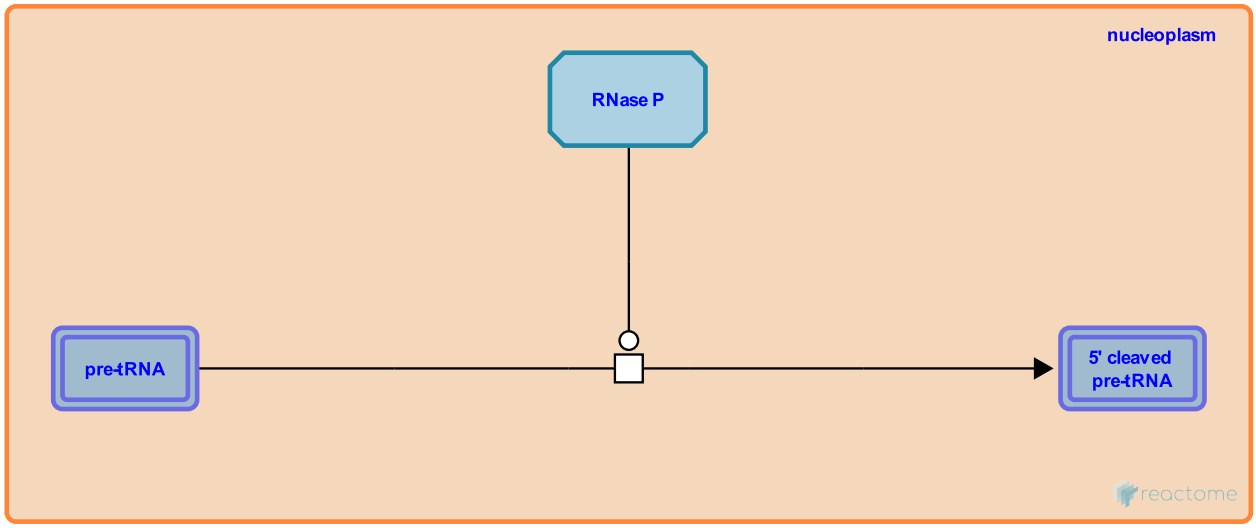
Stable identifier: R-HSA-5696810

Type: transition

Compartments: nucleoplasm



The RNase P RNA-protein complex located in the nucleus endonucleolytically cleaves near the 5' end of pre-tRNAs, generating the mature 5' end (Ferrari et al. 1980, Bartkiewicz et al. 1989, Jiang et al. 2001, Reiner et al. 2011, reviewed in Jarrous 2002). The site of cleavage is determined by the length of the helices in the acceptor and T stems of the tRNA (Yuan and Altman 1995). Human cells contain distinct nuclear and mitochondrial RNase P activities (Rossmanith et al. 1995), with nuclear RNase P localized in the nucleolus (Jarrous et al. 1999). The nuclear RNase P is similar to bacterial enzymes in having a catalytic RNA component. The mitochondrial RNase P is unusual in containing only protein subunits (Holzmann et al. 2008).

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Editions

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