

TTL ligates L-Tyr to the carboxy terminus of alpha-tubulin

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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

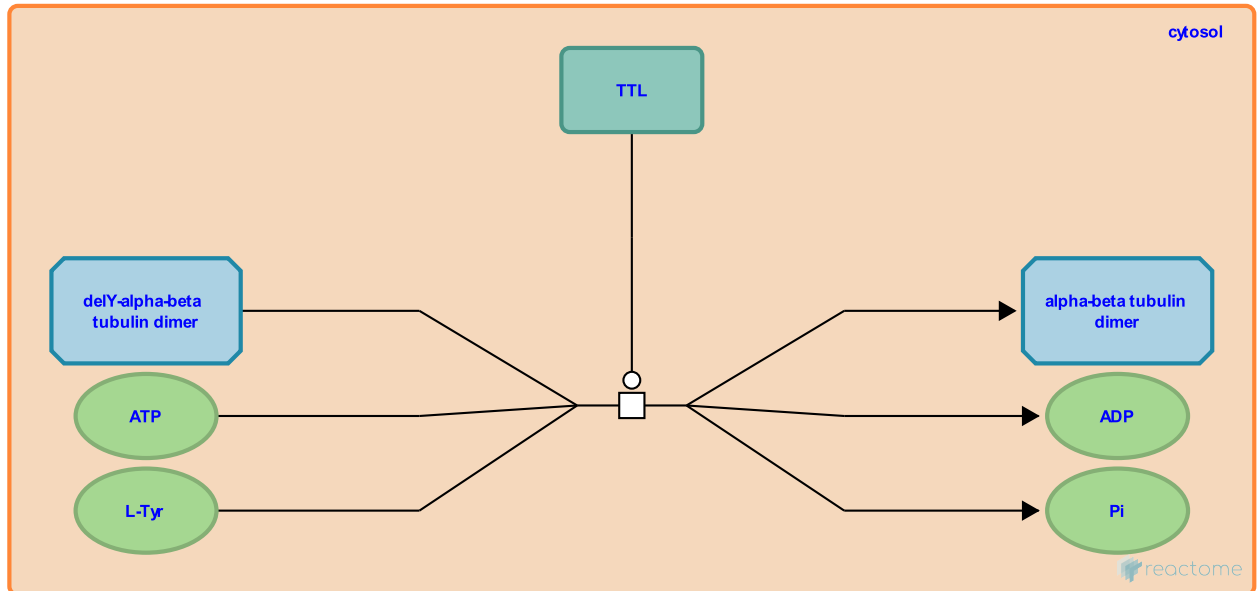
This document contains 1 reaction ([see Table of Contents](#))

TTL ligates L-Tyr to the carboxy terminus of alpha-tubulin ↗

Stable identifier: R-BTA-8955724

Type: transition

Compartments: cytosol



TTL (tubulin tyrosine ligase) ligates tyrosine (L-Tyr) to the carboxy terminus of the alpha-tubulin subunit of an alpha tubulin:beta tubulin dimer in an ATP-dependent reaction. The reaction mechanism has been worked out with bovine proteins, as annotated here (Deans et al. 1992), and structural studies that demonstrate the basis of the enzyme's specificity for the carboxy terminus of tubulin alpha chains have been carried out with chicken proteins (Prota et al. 2013).

Literature references

Steinmetz, MO., Kammerer, RA., Jaussi, R., Kuijpers, M., Magiera, MM., Prota, AE. et al. (2013). Structural basis of tubulin tyrosination by tubulin tyrosine ligase. *J. Cell Biol.*, 200, 259-70. ↗

Allison, RD., Deans, NL., Purich, DL. (1992). Steady-state kinetic mechanism of bovine brain tubulin: tyrosine ligase. *Biochem. J.*, 286, 243-51. ↗

Editions

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