

SVBP:VASH1,VASH2 hydrolyzes the terminal L-Tyr residue from alphaY-beta tu-

bulin dimer

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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

- Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18*, 142. 7
- Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. A
- Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗
- Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology*, *14*, e1005968. *オ*

This document contains 1 reaction (see Table of Contents)

SVBP:VASH1,VASH2 hydrolyzes the terminal L-Tyr residue from alphaY-beta tubulin dimer **7**

Stable identifier: R-HSA-8955712

Type: transition

Compartments: cytosol

Inferred from: TTCP hydrolyzes the terminal L-Tyr residue from alpha-tubulin (Bos taurus)



TTCP (tubulinyl-tyrosine carboxypeptidase) hydrolyzes the terminal L-Tyr residue from the alpha-tubulin subunit of an alpha tubulin:beta tubulin dimer to yield delY-alpha tubulin and L-tyrosine (L-Tyr). Although TTCP enzyme has not been purified from any species, studies of material partially purified from chicken brain have allowed its activity to be defined and distinguished from those of widely expressed carboxypeptidases with broader substrate specificities (Argarana et al. 1980). This reaction is known to occur in humans (Song & Brody 2015; Yu et al. 2015) and its properties have been inferred from those of its chicken counterpart.

Literature references

Roll-Mecak, A., Yu, I., Garnham, CP. (2015). Writing and Reading the Tubulin Code. J. Biol. Chem., 290, 17163-72. 🛪

- Brady, ST., Song, Y. (2015). Post-translational modifications of tubulin: pathways to functional diversity of microtubules. *Trends Cell Biol., 25*, 125-36.
- Caputto, R., Barra, HS., Argarana, CE. (1980). Tubulinyl-tyrosine carboxypeptidase from chicken brain: properties and partial purification. J. Neurochem., 34, 114-8. 7
- Sanman, LE., Delphin, C., Lafanechère, L., Aillaud, C., Syed, S., Amara, N. et al. (2017). Vasohibins/SVBP are tubulin carboxypeptidases (TCPs) that regulate neuron differentiation. *Science*, *358*, 1448-1453. *¬*

Editions

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