

THEM4 (CTMP) and/or TRIB3 inhibit AKT phosphorylation

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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. [↗](#)

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. [↗](#)

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. [↗](#)

Reactome database release: 88

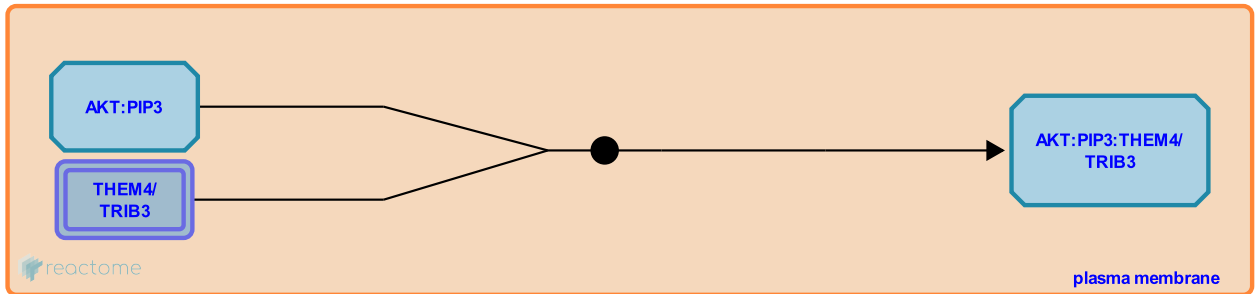
This document contains 1 reaction ([see Table of Contents](#))

THEM4 (CTMP) and/or TRIB3 inhibit AKT phosphorylation ↗

Stable identifier: R-HSA-199443

Type: binding

Compartments: plasma membrane



The phosphorylation of membrane-recruited AKT at threonine and serine can be inhibited by direct binding of two different proteins, C-terminal modulator protein (THEM4 i.e. CTMP), which binds to the carboxy-terminal tail of AKT (Maira et al. 2001), or Tribbles homolog 3 (TRIB3), which binds to the catalytic domain of AKT (Du et al. 2003).

Literature references

Kulkarni, RN., Herzig, S., Du, K., Montminy, M. (2003). TRB3: a tribbles homolog that inhibits Akt/PKB activation by insulin in liver. *Science*, 300, 1574-7. ↗

Kaech, S., Maira, SM., Brazil, DP., Galetic, I., Ingley, E., Thelen, M. et al. (2001). Carboxyl-terminal modulator protein (CTMP), a negative regulator of PKB/Akt and v-Akt at the plasma membrane. *Science*, 294, 374-80. ↗

Editions

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|------------|----------|--------------------------------------|
| 2006-10-10 | Authored | Annibali, D., Nasi, S. |
| 2007-11-08 | Reviewed | Greene, LA. |
| 2012-07-18 | Revised | Orlic-Milacic, M. |
| 2012-08-03 | Edited | Matthews, L. |
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