

# PIAS4 SUMOylates TOP2A with SUMO2,3

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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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

## Literature references

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Reactome database release: 70

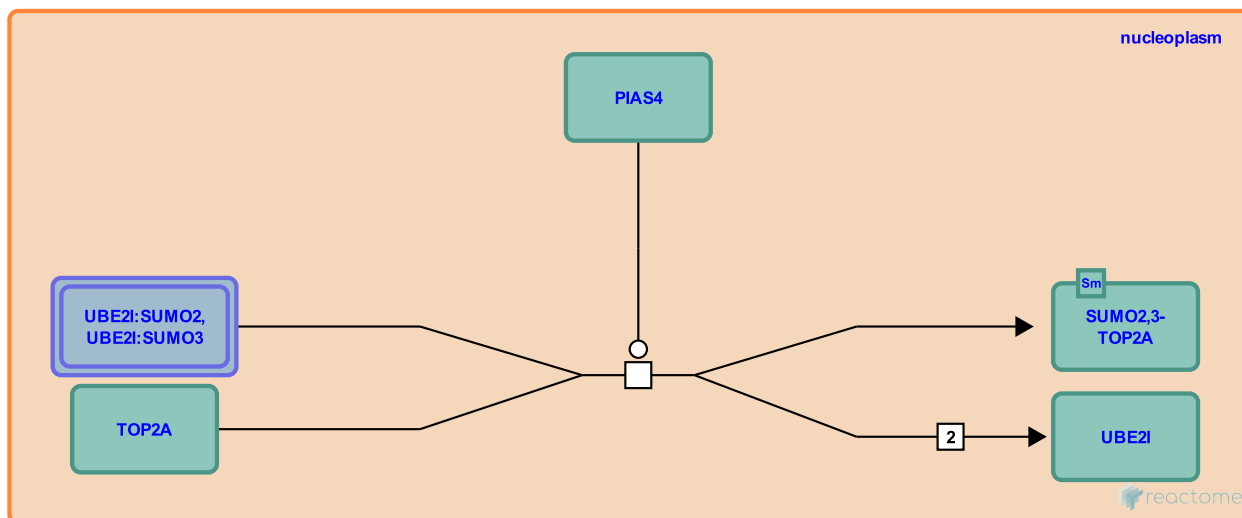
This document contains 1 reaction ([see Table of Contents](#))

## PIAS4 SUMOylates TOP2A with SUMO2,3 [↗](#)

**Stable identifier:** R-HSA-4641350

**Type:** transition

**Compartments:** nucleoplasm



PIAS4 SUMOylates TOP2A with SUMO2,3 (Díaz-Martínez et al. 2006, Agostinho et al. 2008, Impens et al. 2014, Tammsalu et al. 2014). SUMOylation is observed in interphase and mitosis in response to inhibitors of topoisomerase. SUMOylated TOP2A is localized to centromeres during mitosis.

### Literature references

Díaz-Martínez, LA., Giménez-Abián, JF., Azuma, Y., Guacci, V., Giménez-Martín, G., Lanier, LM. et al. (2006). PIAS-gamma is required for faithful chromosome segregation in human cells. *PLoS ONE*, 1, e53. [↗](#)

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### Editions

2013-09-27	Authored, Edited	May, B.
2015-10-04	Reviewed	Zhang, XD.