

# Activation of RAC1 by SOS

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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](#))

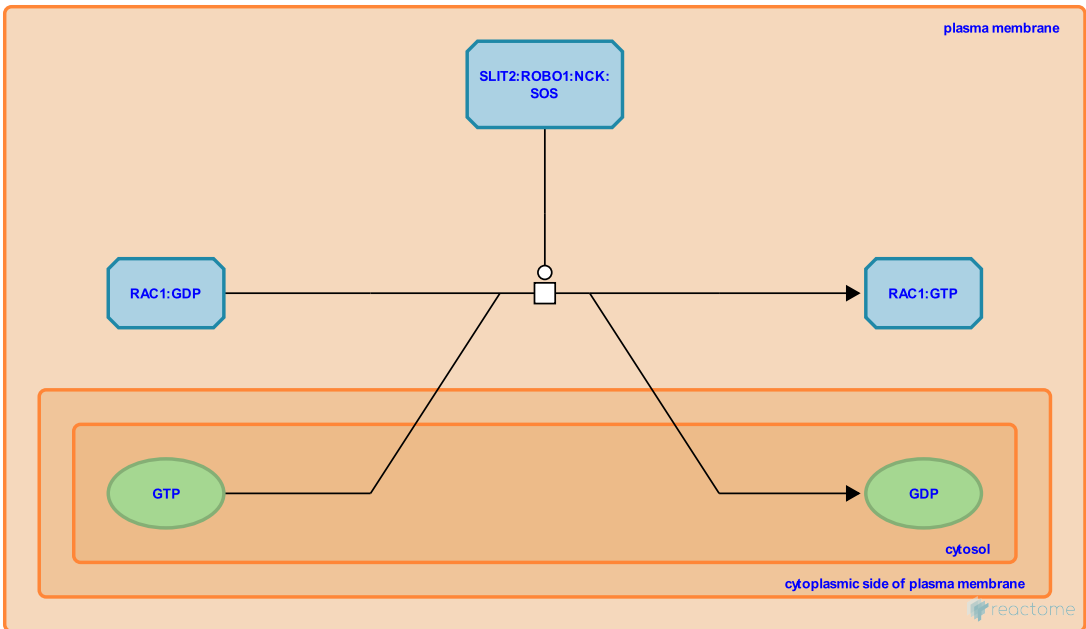
Activation of RAC1 by SOS ↗

Stable identifier: R-HSA-428535

Type: transition

Compartments: cytosol, plasma membrane

Inferred from: [Activation of Rac by Sos \(Drosophila melanogaster\)](#)



SOS (SOS1 or SOS2), bound to Dock orholog NCK (NCK1 or NCK2), has a Rac GEF activity and activates RAC1. Son of sevenless (SOS) is a dual specificity guanine nucleotide exchange factor (GEF) that regulates both Ras and Rho family GTPases. The Ras and Rac-GEF activities of Sos can be uncoupled during ROBO-mediated axon repulsion; SOS axon guidance function depends on its Rac-GEF activity, but not its Ras-GEF activity (Yang and Bashaw 2006).

Editions

2008-09-05	Authored, Edited	Garapati, P V.
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