

Cys-sulfenyl chloride is converted to Cys-sulfenic acid

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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

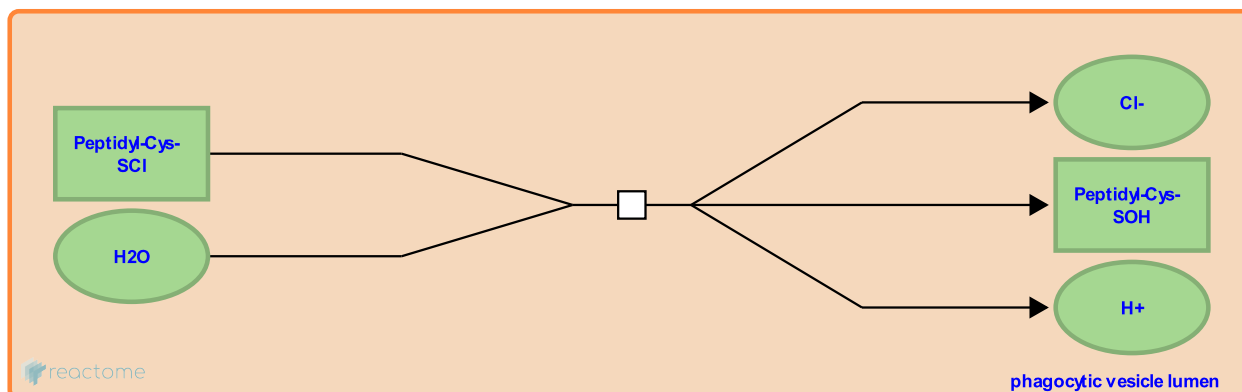
This document contains 1 reaction ([see Table of Contents](#))

Cys-sulfenyl chloride is converted to Cys-sulfenic acid [↗](#)

Stable identifier: R-HSA-9625540

Type: transition

Compartments: phagocytic vesicle lumen



Thiol-containing cysteine (Cys) residues are reactive with species of the oxidative burst. Hypochlorous acid (HOCl) leads to chlorination of Cys residues forming Cys-sulfenic acid (Cys-SOH) intermediates, which can either form a disulfide with an adjacent thiol or be further oxidized by HOCl to generate Cys-sulfinic and Cys-sulfonic acids sequentially (Peskin AV & Winterbourn CC 2001; Hawkins CL et al. 2003; Paulsen CE & Carroll KS 2013; Winterbourn CC & Kettle AJ 2013). Disulfides function as redox switches to control protein activity and protect thiol groups against overoxidation to Cys-sulfinic and -sulfonic acids (Paulsen CE & Carroll KS 2013).

Literature references

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Editions

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