

SCD5 gene expression

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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

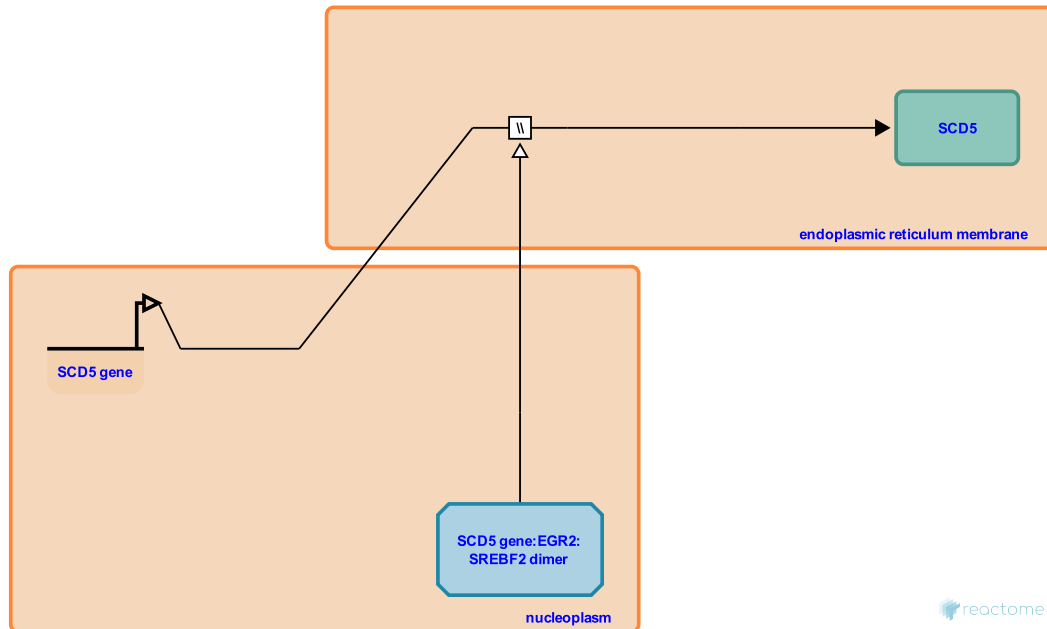
This document contains 1 reaction ([see Table of Contents](#))

SCD5 gene expression [↗](#)

Stable identifier: R-HSA-9621399

Type: omitted

Compartments: nucleoplasm, endoplasmic reticulum membrane



Stearoyl-CoA desaturase 5 (SCD5, also known as acyl-CoA desaturase 4 or SCD2) is a ER-membrane protein involved in the desturation of fatty acyl-CoA substrates (Wang et al, 2005; Zhang et al, 2005). SCD5 gene expression is upregulated in an SREBF2- and EGR2-dependent manner during Schwann cell myelination (Tabor et al, 1998; Tabor et al, 1999; Horton et al, 2003; LeBlanc et al, 2004; Jang et al, 2010).

Literature references

- Spiegelman, BM., Edwards, PA., Tabor, DE., Kim, JB. (1999). Identification of conserved cis-elements and transcription factors required for sterol-regulated transcription of stearoyl-CoA desaturase 1 and 2. *J Biol Chem*, 274, 20603-10. [↗](#)
- Shi, Y., Yang, Y., Zhang, S. (2005). Characterization of human SCD2, an oligomeric desaturase with improved stability and enzyme activity by cross-linking in intact cells. *Biochem. J.*, 388, 135-42. [↗](#)
- Edwards, PA., Spiegelman, BM., Tabor, DE., Kim, JB. (1998). Transcriptional activation of the stearoyl-CoA desaturase 2 gene by sterol regulatory element-binding protein/adipocyte determination and differentiation factor 1. *J. Biol. Chem.*, 273, 22052-8. [↗](#)
- Nagarajan, R., Keles, S., Jones, EA., Sun, G., Chang, LW., Svaren, J. et al. (2010). Locus-wide identification of Egr2/Krox20 regulatory targets in myelin genes. *J. Neurochem.*, 115, 1409-20. [↗](#)
- Cao, G., Wang, J., Su, C., Yu, L., Huang, X., Schmidt, RE. et al. (2005). Characterization of HSCD5, a novel human stearoyl-CoA desaturase unique to primates. *Biochem. Biophys. Res. Commun.*, 332, 735-42. [↗](#)

Editions

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