

# CEBPA binds CDK2

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04/05/2024

## 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

- 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

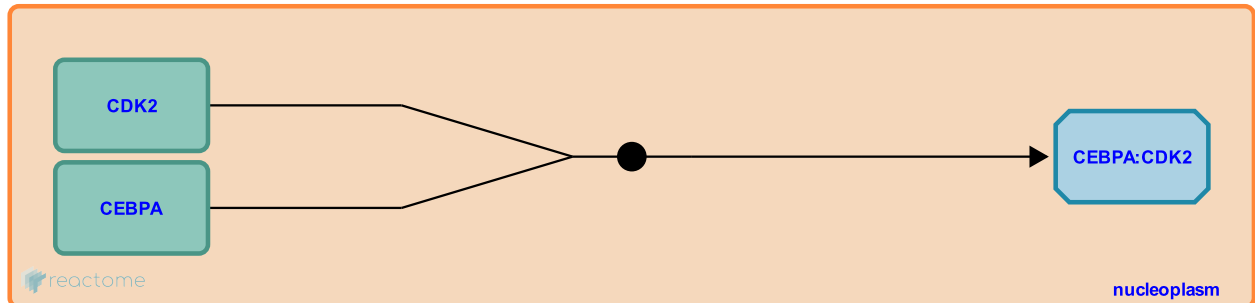
This document contains 1 reaction ([see Table of Contents](#))

## CEBPA binds CDK2 [↗](#)

**Stable identifier:** R-HSA-9624120

**Type:** binding

**Compartments:** nucleoplasm



CEBPA binds CDK2 and disrupts CDK2:cyclin complexes thereby inhibiting kinase activity of CDK2, which may contribute to the inhibition of cellular proliferation observed in response to CEBPA (Wang et al. 2001). CEBPA interacts with the T loop region of CDK2. In mouse liver cells, 35%-50% of Cdk2 is associated with Cebpa (Wang et al. 2001).

### Literature references

Welm, A., Iakova, P., Roesler, WJ., Goode, T., Wilde, M., Timchenko, NA. et al. (2001). C/EBPalpha arrests cell proliferation through direct inhibition of Cdk2 and Cdk4. *Mol. Cell*, 8, 817-28. [↗](#)

Nakanishi, M., Albrecht, JH., Harris, TE., Darlington, GJ. (2001). CCAAT/enhancer-binding protein-alpha cooperates with p21 to inhibit cyclin-dependent kinase-2 activity and induces growth arrest independent of DNA binding. *J. Biol. Chem.*, 276, 29200-9. [↗](#)

### Editions

2018-10-08	Authored, Edited	May, B.
2019-03-10	Reviewed	Skokowa, J.