

Butyrylcholinesterase hydrolyzes acyl Ghrelin

May, B., Zhang, Weizhen.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

The contents of this document may be freely copied and distributed in any media, provided the authors, plus the institutions, are credited, as stated under the terms of <u>Creative Commons Attribution 4.0 International (CC BY 4.0)</u>
<u>License</u>. For more information see our <u>license</u>.

04/05/2024

https://reactome.org

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)

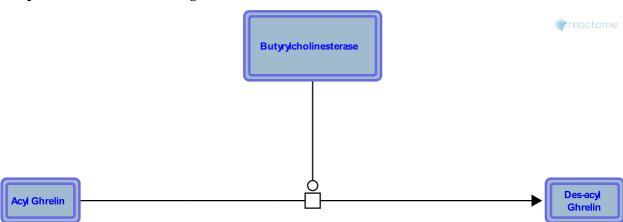
https://reactome.org Page 2

Butyrylcholinesterase hydrolyzes acyl Ghrelin 7

Stable identifier: R-HSA-9023617

Type: transition

Compartments: extracellular region



The majority of circulating ghrelin is not acylated (des-acyl ghrelin). Acyl ghrelin can be deacylated in the bloodstream by butyrylcholinesterase and platelet-activating factor acetylhydrolase, which are associated with circulating lipids. Other enzymes may also have this capability. It is unknown if a portion of des-acyl ghrelin in the bloodstream is generated by direct synthesis and secretion.

Literature references

Yin, X., Li, Y., Zhang, W., An, W., Xu, G. (2009). Ghrelin fluctuation, what determines its production?. *Acta Biochim Biophys Sin (Shanghai)*, 41, 188-97.

Carpentier, Y., Delporte, C., Hacquebard, M., De Vriese, C., Gregoire, F. (2007). Ghrelin interacts with human plasma lipoproteins. *Endocrinology*, 148, 2355-62.

Soares, JB., Leite-Moreira, AF. (2008). Ghrelin, des-acyl ghrelin and obestatin: three pieces of the same puzzle. *Peptides*, 29, 1255-70.

Delporte, C., Robberecht, P., Lema-Kisoka, R., De Vriese, C., Waelbroeck, M., Gregoire, F. (2004). Ghrelin degradation by serum and tissue homogenates: identification of the cleavage sites. *Endocrinology*, 145, 4997-5005.

Editions

2009-06-11	Authored, Edited	May, B.
2009-08-30	Reviewed	Zhang, Weizhen.