Bacterial GUSB hydrolyses BDG to BIL

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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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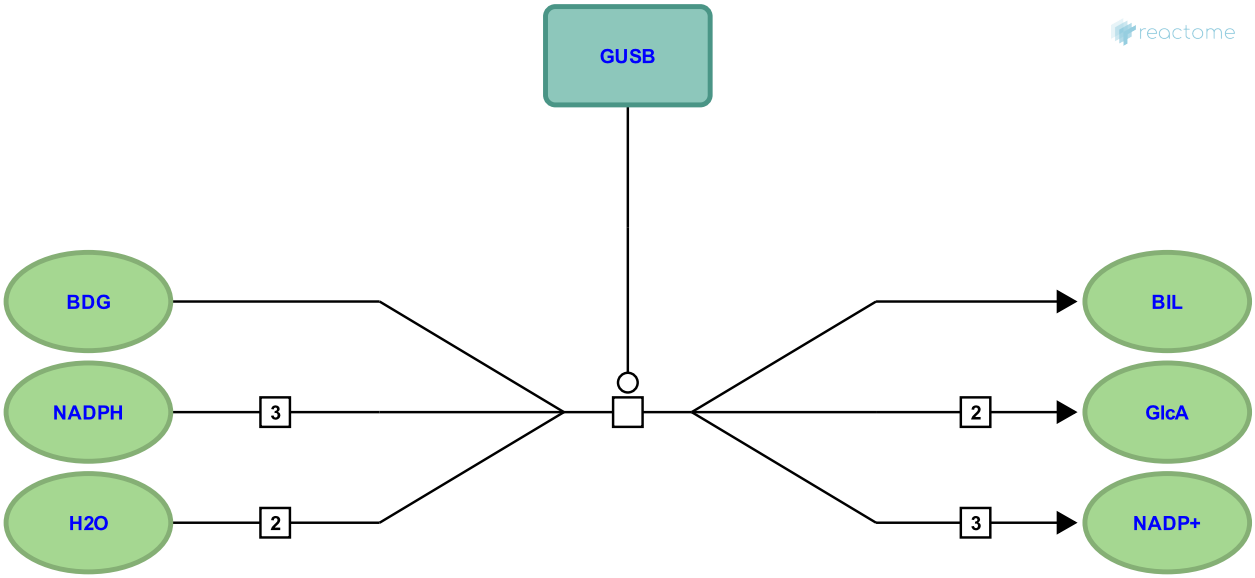
Stable identifier: R-HSA-9661820

Type: transition

Compartments: extracellular region



Bilirubin diglucuronide (BDG) is a substrate for microbial β-glucuronidase, which can cleave the glucuronosyl moieties and liberate bilirubin for reabsorption through the basolateral surfaces of the intestines where it can undergo further metabolism or pass directly back into the circulation. This process, known as enterohepatic circulation, can extend the half-life of bilirubin while adding to the total serum bilirubin load (Seyfried et al. 1976). Conjugated bilirubin is excreted in bile through the duodenum, where it can be unconjugated by enteric bacteria (Kim et al. 1995). Many bacterial β-glucuronidases can cleave the glucuronosyl moieties from conjugated bilirubins in the human gut. In vitro assays reveal the C. perfringens species produce beta-glucuronidase enzyme activity that is at least 30-fold higher than other bacterial species (Leung et al. 2001).

Urobilinogen (D-urobilinogen) is closely related to two other compounds: mesobilirubinogen (I-urobilinogen) and stercobilinogen (L-urobilinogen). Somewhat confusingly, all three compounds are frequently collectively referred to as "urobilinogens".

Literature references

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Editions

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