DPH2 transfers a 3-amino-3-carboxypropyl group from AdoMet to residue 715 of nascent EEF2

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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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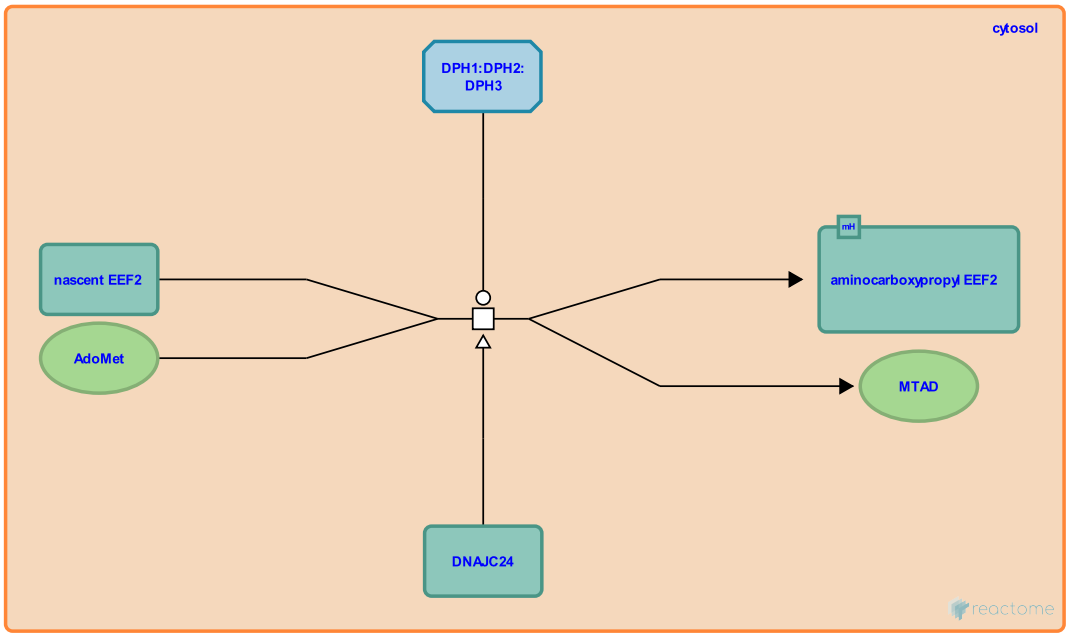
Stable identifier: R-HSA-5358494

Type: transition

Compartments: cytosol



The diphthamide biosynthesis protein 2 (DPH2) subunit of the cytosolic DPH1:DPH2:DPH3 complex catalyzes the transfer of a 3-amino-3-carboxypropyl group from S-adenosylmethionine (AdoMet) to residue 715 of nascent elongation factor 2 (EEF2), forming aminocarboxypropyl EEF2 and S-methylthioadenosine (MTAD). The association of DPH1, 2, and 3 to form a complex is inferred from studies of the homologous yeast proteins (Abdel-Fattah et al. 2013; Bar et al. 2008) and more limited studies of interactions among mouse and human ones (Liu et al. 2004). The identification of DPH2 as the catalytically active subunit of the DPH1:DPH2:DPH3 complex is inferred from the properties of the homologous Pyrococcus horikoshii protein (Zhang et al. 2010). DPH4 (DNAJC24) is needed for the reaction to occur but its exact role is unknown (Liu et al. 2004; Su et al. 2013). DPH3 is an electron donor for DPH1-DPH2 in the first step of diphthamide biosynthesis (Dong et al. 2014).

Literature references

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Editions

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