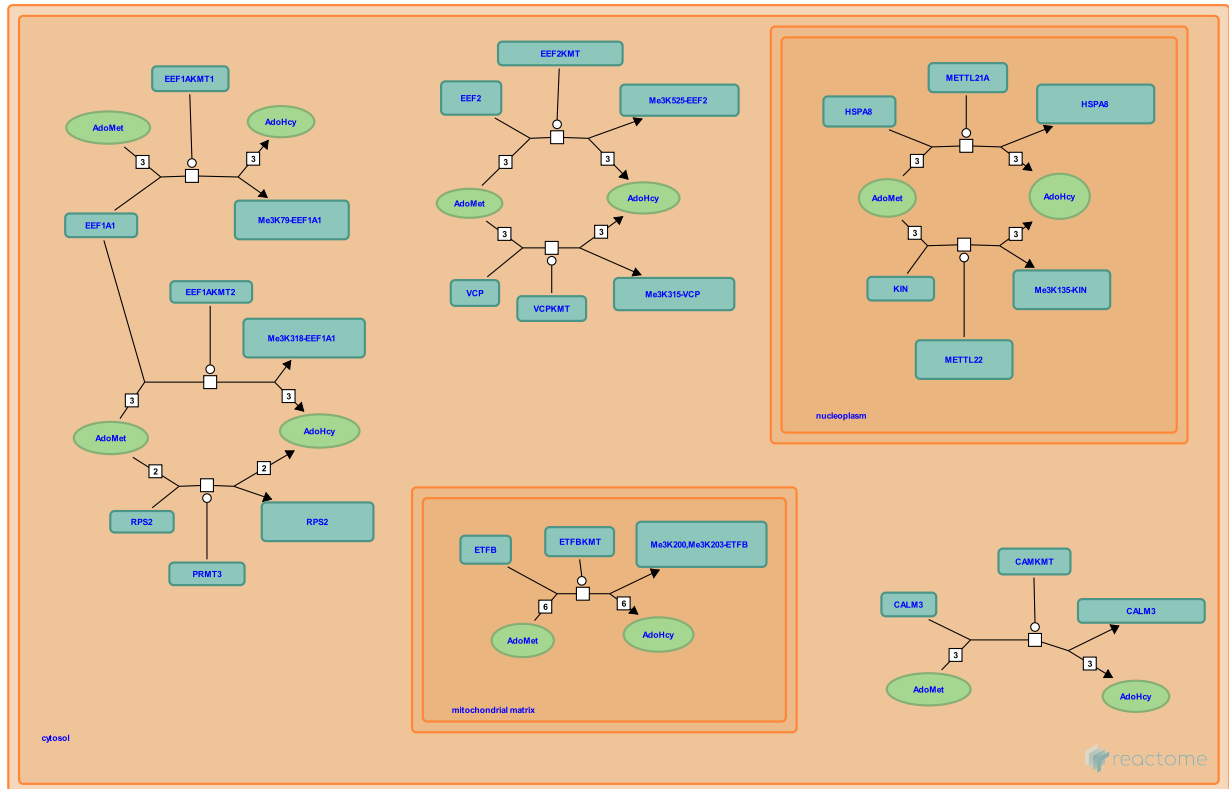


# Protein methylation



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 [Creative Commons Attribution 4.0 International \(CC BY 4.0\) License](https://creativecommons.org/licenses/by/4.0/). For more information see our [license](https://reactome.org/licenses/).

This is just an excerpt of a full-length report for this pathway. To access the complete report, please download it at the [Reactome Textbook](https://reactome.org/textbook/).

05/05/2024

## 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. [↗](#)

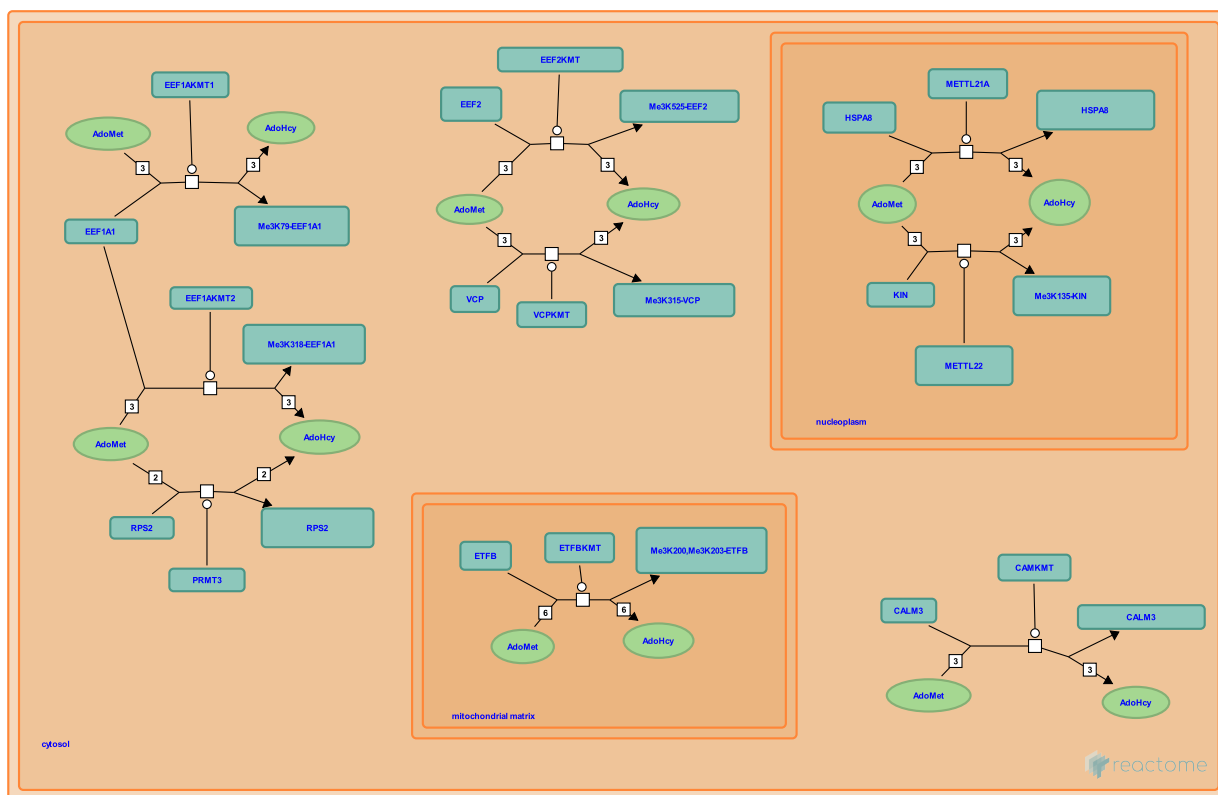
Reactome database release: 88

This document contains 1 pathway and 9 reactions ([see Table of Contents](#))

## Protein methylation ↗

Stable identifier: R-SSC-887625

Inferred from: [Protein methylation \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## PRMT3 transfers 3xCH3 from 3xAdoMet to RPS2 ↗

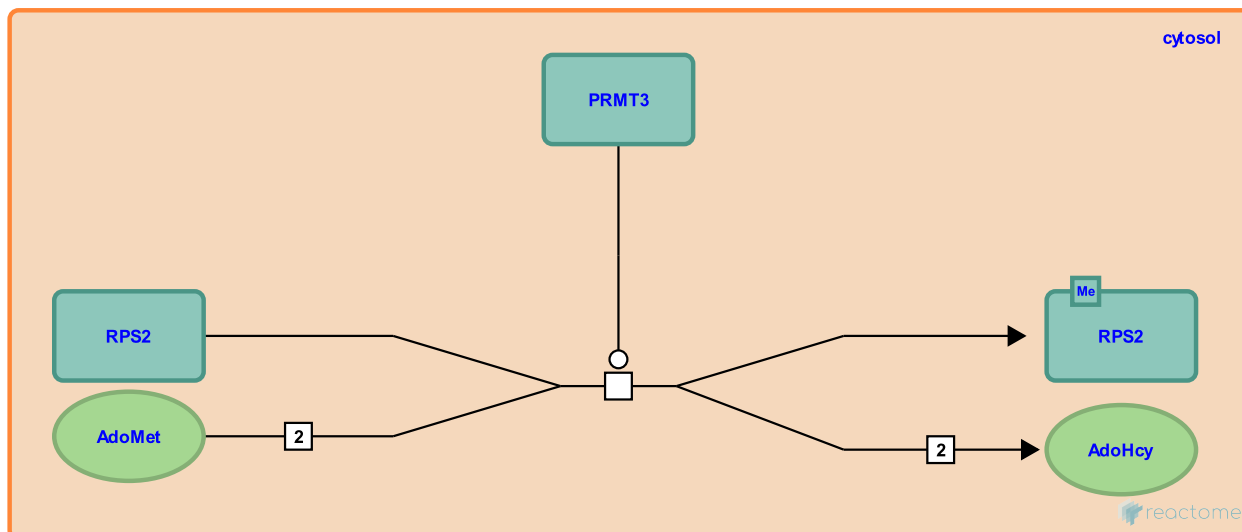
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-8879123

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [PRMT3 transfers 3xCH3 from 3xAdoMet to RPS2 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## ETFBKMT transfers 3xCH3 from 3xAdoMet to ETFB ↗

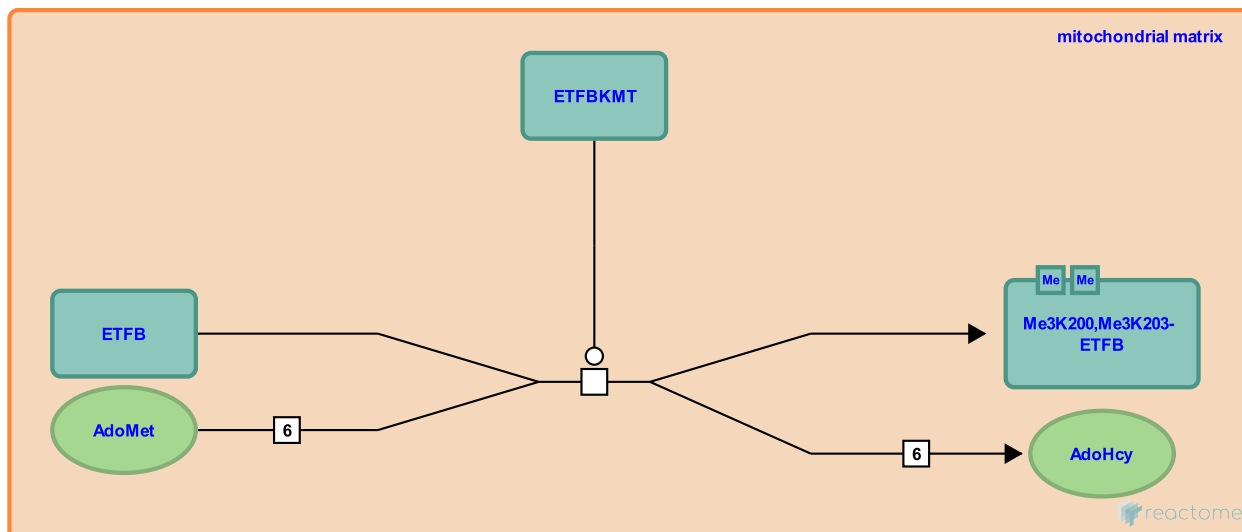
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-8931858

**Type:** transition

**Compartments:** mitochondrial matrix

**Inferred from:** [ETFBKMT transfers 3xCH3 from 3xAdoMet to ETFB \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## N6AMT2 transfers 3xCH3 from 3xAdoMet to EEF1A ↗

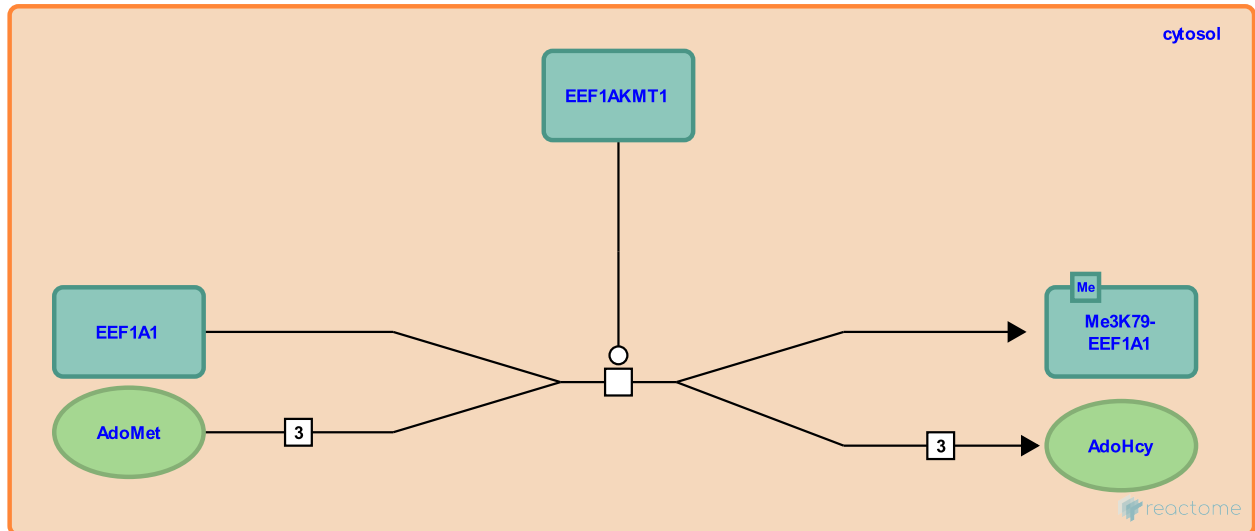
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-8931974

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [N6AMT2 transfers 3xCH3 from 3xAdoMet to EEF1A \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## METTL21A transfers 3xCH3 from 3xAdoMet to HSPA8 ↗

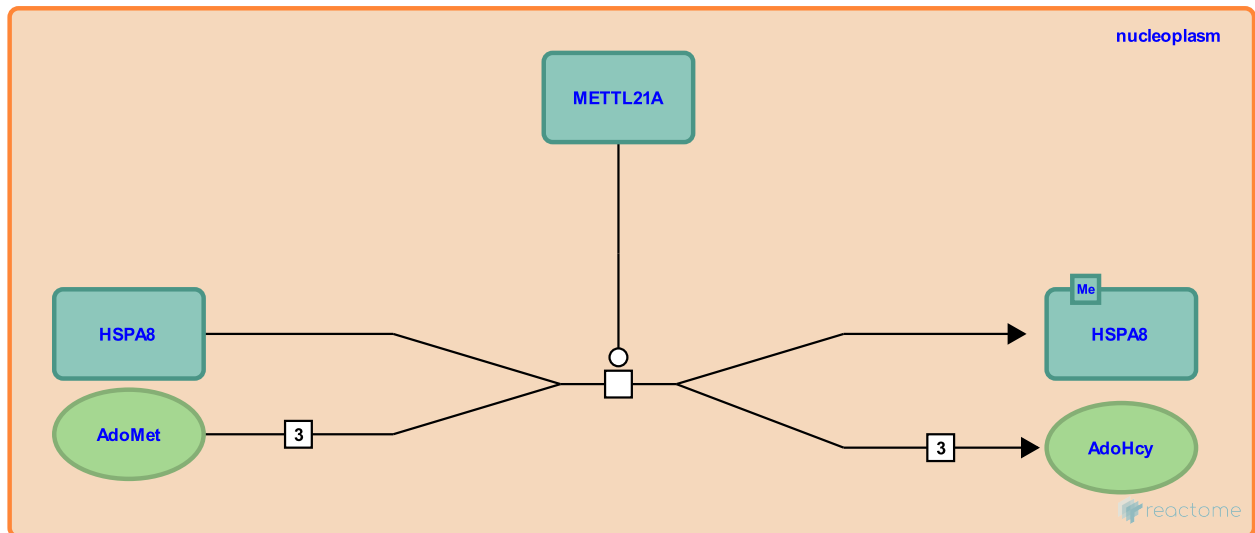
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-8932221

**Type:** transition

**Compartments:** nucleoplasm

**Inferred from:** [METTL21A transfers 3xCH3 from 3xAdoMet to HSPA8 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## EEF2KMT transfers 3xCH3 from 3xAdoMet to EEF2 ↗

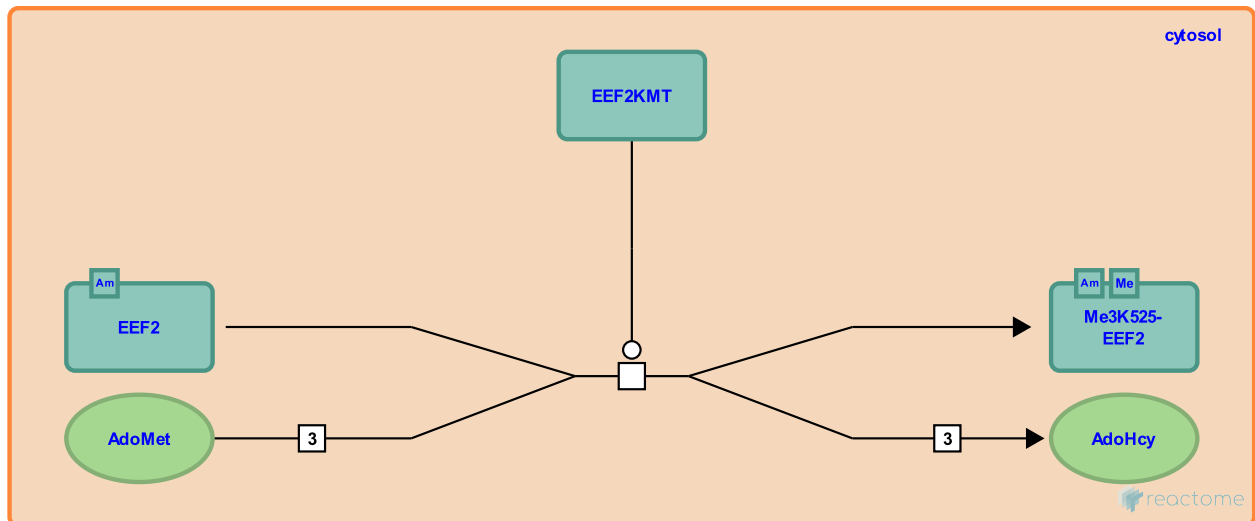
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-8932243

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [EEF2KMT transfers 3xCH3 from 3xAdoMet to EEF2 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>



## METTL22 transfers 3xCH3 from 3xAdoMet to KIN ↗

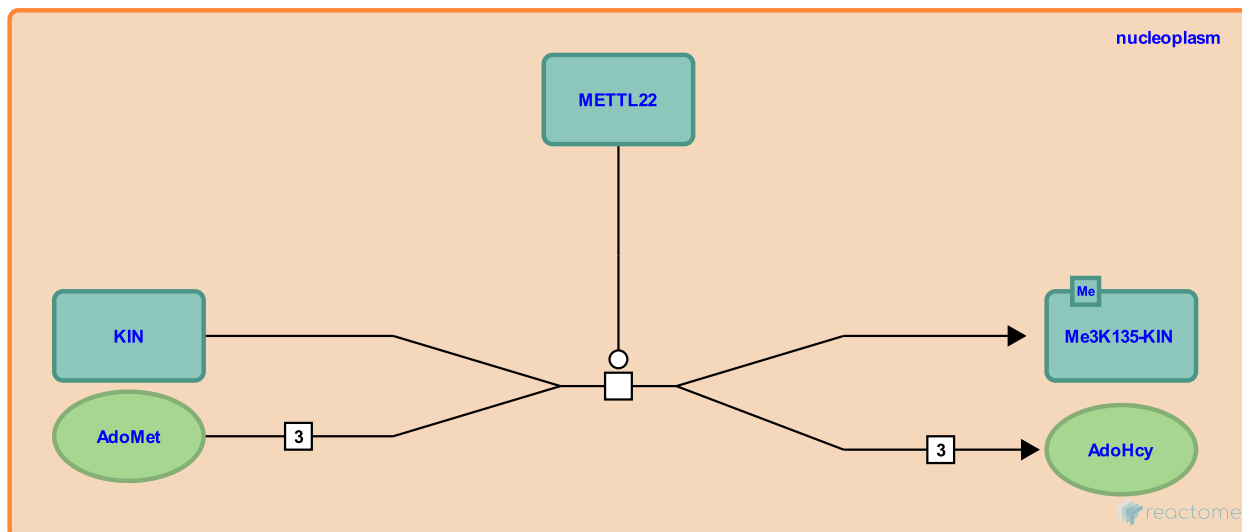
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-8932275

**Type:** transition

**Compartments:** nucleoplasm

**Inferred from:** [METTL22 transfers 3xCH3 from 3xAdoMet to KIN \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## VCPKMT (METTL21D) transfers 3xCH3 from 3xAdoMet to VCP ↗

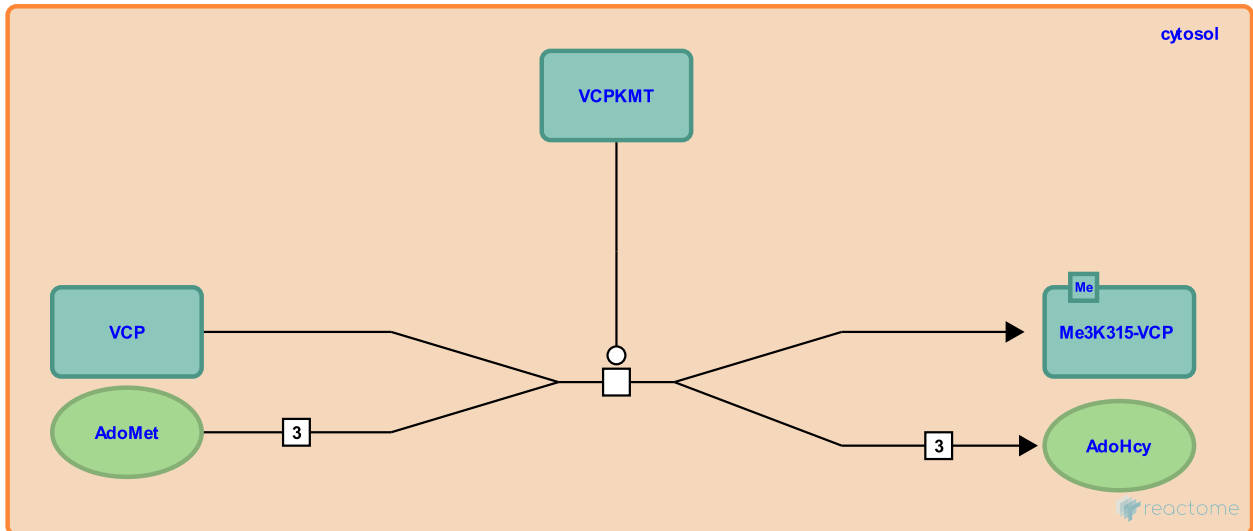
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-8932276

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [VCPKMT \(METTL21D\) transfers 3xCH3 from 3xAdoMet to VCP \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## METTL10 transfers 3xCH3 from 3xAdoMet to EEF1A1 ↗

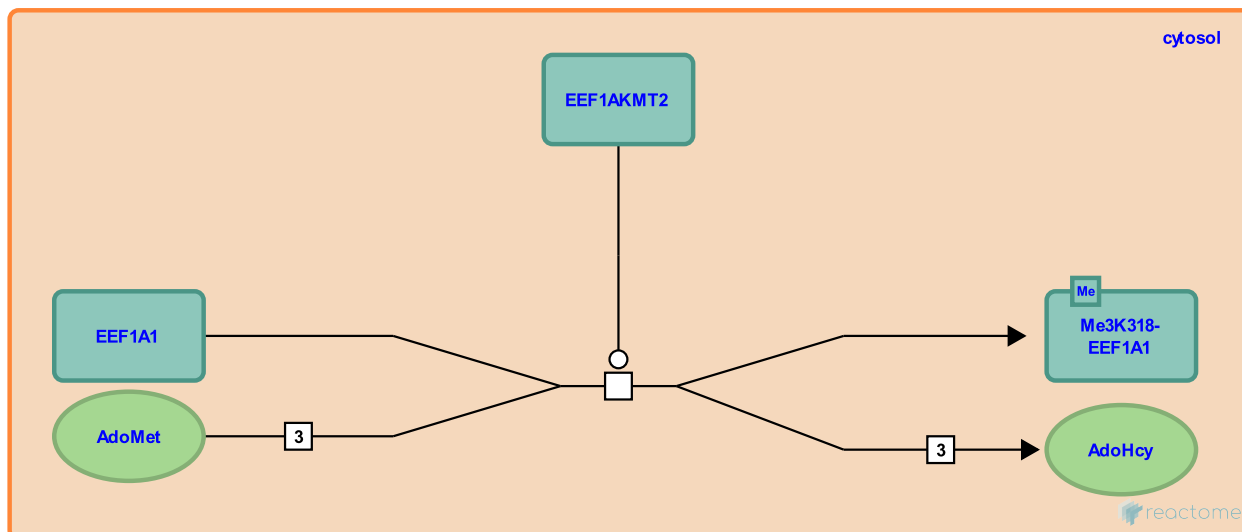
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-8932413

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [METTL10 transfers 3xCH3 from 3xAdoMet to EEF1A1 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## KAMKMT transfers 3xCH<sub>3</sub> groups from 3xAdoMet to CALM1 ↗

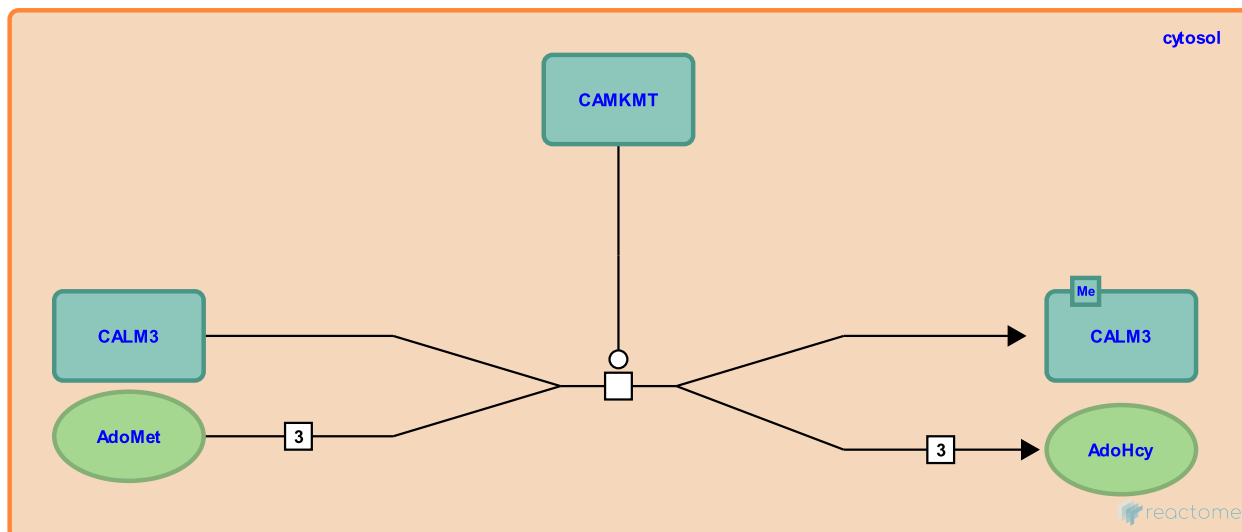
**Location:** [Protein methylation](#)

**Stable identifier:** R-SSC-6786205

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [KAMKMT transfers 3xCH<sub>3</sub> groups from 3xAdoMet to CALM1 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

# Table of Contents

Introduction	1
☰ Protein methylation	2
↳ PRMT3 transfers 3xCH <sub>3</sub> from 3xAdoMet to RPS2	3
↳ ETFBKMT transfers 3xCH <sub>3</sub> from 3xAdoMet to ETFB	4
↳ N6AMT2 transfers 3xCH <sub>3</sub> from 3xAdoMet to EE1A	5
↳ METTL21A transfers 3xCH <sub>3</sub> from 3xAdoMet to HSPA8	6
↳ EE12KMT transfers 3xCH <sub>3</sub> from 3xAdoMet to EE12	7
↳ METTL22 transfers 3xCH <sub>3</sub> from 3xAdoMet to KIN	8
↳ VCPKMT (METTL21D) transfers 3xCH <sub>3</sub> from 3xAdoMet to VCP	9
↳ METTL10 transfers 3xCH <sub>3</sub> from 3xAdoMet to EE1A1	10
↳ KAMKMT transfers 3xCH <sub>3</sub> groups from 3xAdoMet to CALM1	11
Table of Contents	12