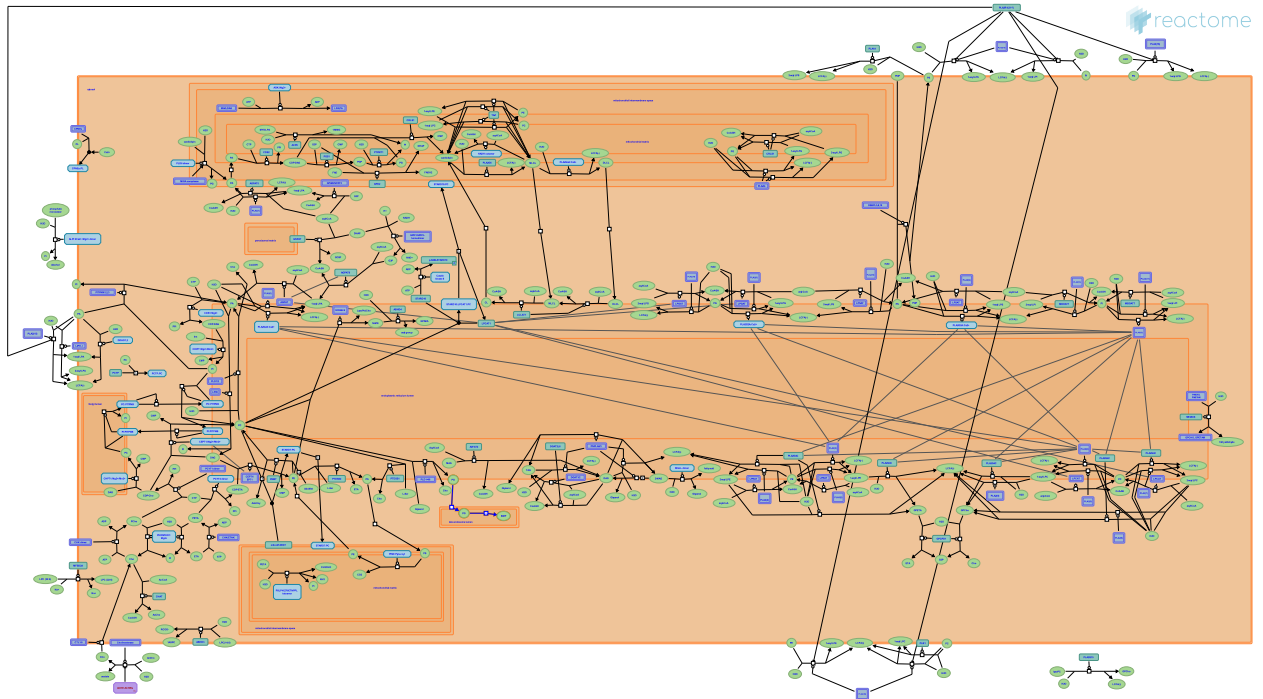


# Synthesis of BMP



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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).

03/05/2024

## 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).

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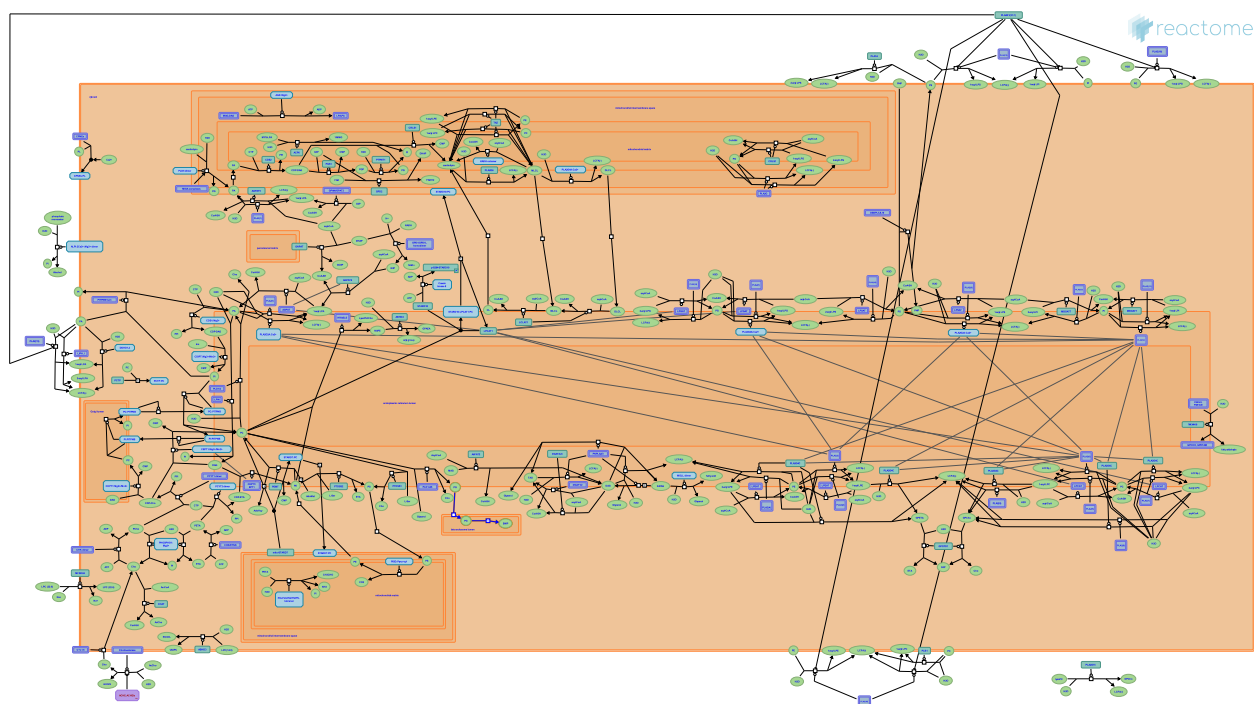
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Reactome database release: 88

This document contains 1 pathway and 2 reactions ([see Table of Contents](#))

## Synthesis of BMP ↗

Stable identifier: R-HSA-1483171



Lysobisphosphatidic acid, also known as bis(monoacylglycerol) hydrogen phosphate (BMP), is enriched in late endosomes and not found in the endoplasmic reticulum (ER) or mitochondria where phosphatidylglycerol (PG) is synthesized. Late endosomes form membrane contact sites with the ER, providing a means for PG to enter the late endosome and be converted to BMP via hydrolysis by a phospholipase A2, followed by acylation, and a reorientation of the phosphoryl ester (Poorthuis & Hostetler 1978, Heravi & Waite 1999, Hullin-Matsuda et al. 2007, Gallala & Sandhoff 2010).

### Literature references

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### Editions

2011-08-12	Edited	Williams, MG.
2011-09-14	Authored	Williams, MG.

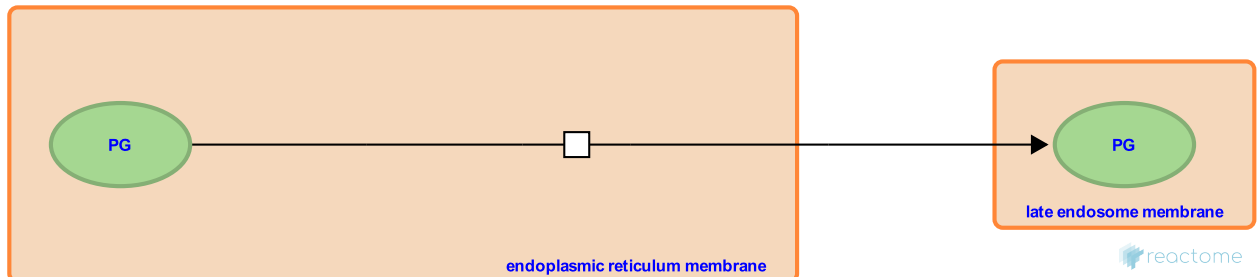
## PG transports from the ER membrane to the late endosome membrane ↗

**Location:** [Synthesis of BMP](#)

**Stable identifier:** R-HSA-1483218

**Type:** transition

**Compartments:** endoplasmic reticulum membrane, late endosome membrane



Lysobisphosphatidic acid, also known as bis(monoacylglycerol) hydrogen phosphate (BMP), is enriched in late endosomes and not found in the endoplasmic reticulum (ER) or mitochondria where phosphatidylglycerol (PG) is synthesised. Late endosomes form membrane contact sites with the ER, providing a means for PG to enter the late endosome and be converted to BMP (Levine 2004, Eden et al. 2010, Kobayashi et al. 1998, Hullin-Matsuda et al. 2007, Kobayashi et al. 1999).

**Followed by:** [PG is converted to BMP](#)

### Literature references

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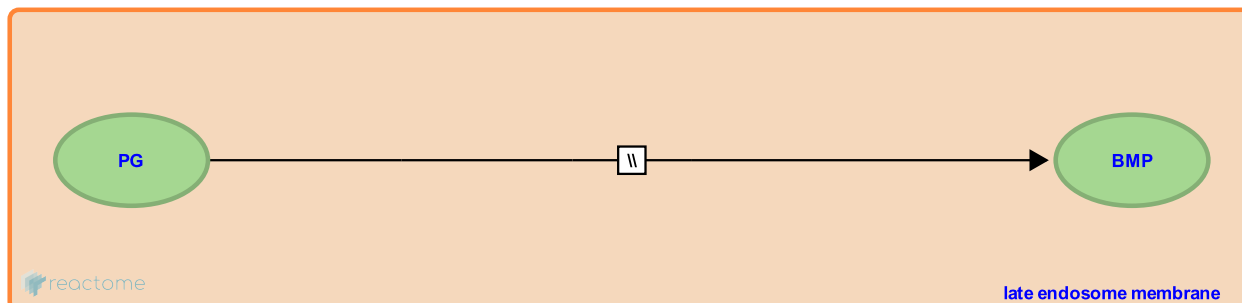
## PG is converted to BMP ↗

**Location:** [Synthesis of BMP](#)

**Stable identifier:** R-HSA-1483209

**Type:** omitted

**Compartments:** late endosome membrane



The biosynthetic pathway of lysobisphosphatidic acid, also known as bis(monoacylglycerol) hydrogen phosphate (BMP), is still not fully understood with the *in vivo* enzymes responsible yet to be fully identified. It appears to involve multiple steps including hydrolysis of phosphatidylglycerol (PG) by a phospholipase A<sub>2</sub>, acylation, and a reorientation of the phosphoryl ester (Poorthuis & Hostetler 1978, Heravi & Waite 1999, Hullin-Matsuda et al. 2007, Gallala & Sandhoff 2010).

**Preceded by:** [PG transports from the ER membrane to the late endosome membrane](#)

## Literature references

- Gallala, HD., Sandhoff, K. (2010). Biological Function of the Cellular Lipid BMP-BMP as a Key Activator for Cholesterol Sorting and Membrane Digestion. *Neurochem Res.* ↗
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