



FACULTY OF
BIOSCIENCE &
BIOINDUSTRY
TOKUSHIMA UNIVERSITY

健康と病態に関わる脂質ネットワークの研究

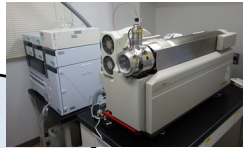
[キーワード: 生理活性脂質, 脂質メタボローム解析]

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脂質は重要な生体物質である

疾患モデル

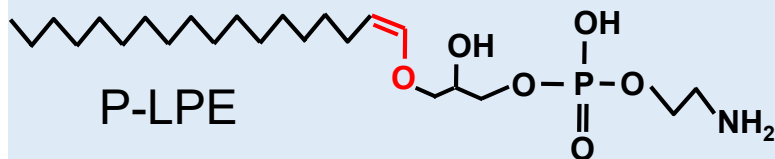
脂質代謝酵素
遺伝子改変マウス



脂質メタボローム解析



難治性皮膚疾患(乾癬など)の増悪に関
わる新規生理活性脂質(P-LPE)を発見



【目標】

1. 新規生理活性脂質の作用機序の解明
2. 難治性疾患の診断と予防法の開発を目的とした新規生理活性脂質の分子機能の理解と治療に利用できる生物資源由来の酵素や有用脂質の創成

内容:

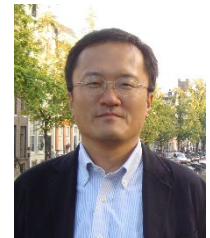
脂質はエネルギー源や細胞膜成分であるのみならず多様な生理活性を有する重要な生体物質であり、その代謝系バランスの破綻は多岐に渡る疾患の重要な要素となります。疾患モデルを惹起した脂質代謝酵素の遺伝子改変マウスを用いた脂質メタボローム研究は、新しい生理活性脂質の創成を導いてくれます。

当研究室では、新規生理活性脂質の生理機能を分子レベルで明らかにすることで、脂質が関与する難治性疾患の分子病態を解明します。さらに疾患の治療と予防に利用できる生物資源由来の酵素や有用脂質を創成することを目標とします。

分野:<病態医化学、皮膚科学、機能生物化学>

専門:<脂質生化学、生化学>

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Study of Bioactive Lipid Network in Health and Disease

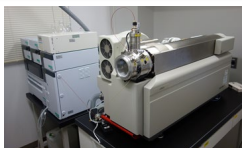
Professor, Kei Yamamoto, Ph.D.

Lipids are the very important substance

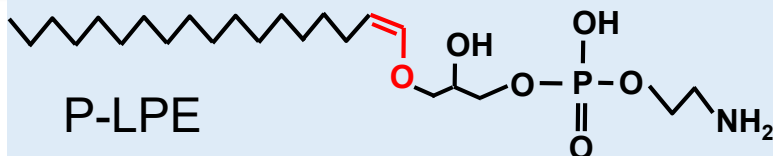
Disease model

Gene-engineered mouse

Lipid metabolome



Discovery of new functional lipid mediator
(P-LPE) for epidermal hyperplasia.



【Aims of the research】

- 1) To explore the molecular mechanisms of new bioactive lipids.
- 2) To clarify the importance of lipid networks and to develop new functional substance from biological resources with aim of expanding into development with a view to diagnosis, prevention, and treatment of related diseases.

Overview

Lipids are the largest energy source in the living body and also serve as a biological molecule and a major component in the structure of the cell membrane. Failure of the metabolic balance leads to disease a wide range. Recent investigation using mice gene-manipulated lipid metabolism enzyme in combination with lipidomics technology have developed new bioactive lipid mediators.

Research in this laboratory focuses on the basic biochemistry and pharmacological control of bioactive lipid mediators and elucidates the molecular functions of lipid-related intractable diseases. On this basis, the research aims at creation of lipid-metabolizing enzyme and functional substance from biological resources toward diagnosis, prevention, and treatment of diseases involving the transformation of lipid metabolism.

Keywords : Bioactive lipid, Lipidomics

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