

社団法人日本栄養・食糧学会 研究業績

<学 会 賞>

研究題目:(和)	無機リン代謝調節に関する分子栄養学研究		
(英)	Molecular nutrition of inorganic phosphate metabolism		
氏 名:(和)	宮本 賢一	生年月日:昭和 30 年 1 月 23 日	
(英)	Ken-ichi Miyamoto		
所属機関:(和)	徳島大学大学院ヘルスバイオサイエンス研究部・分子栄養学分野		
(英)	Department of Molecular Nutrition, Institution of Health Biosciences, The University of Tokushima Graduate School		
学 位:	保健学博士	最終学歴:	徳島大学大学院栄養学研究科 博士後期課程
会員番号:	0097029770	入会年度:	1991 年

研究業績要旨(1,000 字以内)

リンは、我々の日常的な摂取で摂取過剰が問題視されている栄養素である。生体カルシウム/リンバランスの異常は、慢性腎臓や代謝性骨疾患など、様々な疾患に関連している。生体のリンバランスは、腸管吸収、腎排泄および骨からの動員により行われ、リントランスポーター (NaPi)はそれらの中心的な役割を担っている。食餌性リンは小腸、腎臓および骨に作用することで、リン代謝調節ホルモンを動員し、NaPi の変動を介して、生体のリンバランスに影響を与える。我々は、1) NaPi-II ファミリーの同定およびノックアウトマウス解析、2) リン調節ホルモンの検索、3) 食餌性リンシグナルの伝達機序について研究を推進した。まず、NaPi-IIa の研究では、機能調節に関係する 3 種類のアイソフォームが存在することを見出した。また NaPi-IIa の食餌性リンによる調節機構を解明し、NaPi-IIa 遺伝子における食餌性リン応答転写因子 (TFE-3)、さらに細胞膜移行に重要な PDZ 蛋白や PEX19 の役割を解明した。次に、NaPi-IIb の研究では、腸管における発現制御機構および各種食餌性因子による調節機構を明らかにした。さらに NaPi-IIc に関する研究では、本トランスポーターが成長に必要である事、また遺伝性低リン血症くる病の原因遺伝子であることを報告した。また、NaPi-IIa, IIb および IIc ノックアウトマウスを作製し、リン代謝異常を解析した。さらに、新しいビタミン D/リン代謝系 (klotho/ fibroblast growth factor 23 FGF23)が、リン代謝に重要である事を明らかにした。また、食事性カルシウム/リン比が、副甲状腺ホルモン、活性型ビタミン D および FGF23 を調節する分子機構を検討した。本研究により、従来はカルシウム代謝の付随的な調節と考えられていたリン代謝において、リン独自の代謝調節機構の存在が明らかになった。

報文等リスト

(1) この研究に直接関連するもの(10 編以内)

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2) その他の論文(編数制限なし)

○リン代謝に関連する研究

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(3) 過去 5 年間の本学会での活動状況

1、第 59 回、日本栄養食糧学会、大会（2005 年）、5 月 12-15 日、東京
シンポジウム、演題：リン調節因子 FGF23 の作用機序の解明（瀬川 博子ほか）
座長：分子栄養

2、第 60 回、日本栄養食糧学会、大会（2006 年）、5 月 19-21 日、静岡
シンポジウム、演題：無機リン酸の栄養代謝と腸管吸収（宮本 賢一 ほか）
座長；分子栄養

3、第 61 回、日本栄養食糧学会、大会（2007 年）、5 月 17-20 日、京都
座長：分子栄養

4、第 62 回、日本栄養食糧学会、大会（2008 年）、5 月 2-4 日、埼玉
シンポジウム「栄養食糧学の新たな展開」-ミネラル代謝の新規調節因子（宮本 賢一
ほか）

5、第 63 回、日本栄養食糧学会、大会（2009 年）、5 月 20-22 日、長崎
栄養生理-ミネラル 1、座長

役職：日本栄養食糧学会中国四国支部 評議員

(4) 特記事項

管理栄養士資格

平成9年度、日本先天代謝異常学会、奨励賞「リン酸トランスポーター異常と疾患」