

(様式1)

公益社団法人日本栄養・食糧学会 研究業績

<学 会 賞>

1. 候補者

研究題目:(和)	ヒト尿を用いる新しいビタミン栄養評価方法の創成		
(英)	Studies on creation of the new method of evaluating the vitamin nutrition in human urine		
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学 位:	農学博士	最終学歴:	昭和 54 (1979) 年 3 月, 京都大学大学院農学研究科食品工学専攻博士課程単位取得退学
専門分野	①栄養生理学、②栄養生化学、③分子栄養学、④公衆栄養学、⑤臨床・病態栄養学、⑥食生態学、⑦調理科学、⑧食品化学・食品分析学、⑨食品機能学、⑩食品工学、⑪食品加工・流通・貯蔵学、⑫食品衛生・安全学、⑬生理学、⑭生化学、⑮分子生物学、⑯臨床医学 (内科系)、⑰臨床医学 (外科系) ⑱その他		
履 歴	昭和 54 年 (1979) 4 月 帝国女子大学家政学部 講師 昭和 61 年 (1986) 4 月 帝国女子大学家政学部 助教授 平成 4 年 (1992) 4 月 大阪国際女子大学人間科学部 教授 平成 10 年 (1998) 4 月 滋賀県立大学人間文化学部 教授 現在に至る		
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2. 研究業績要旨(1,000字以内)

実験動物を用いたトリプトファン-ナイアシン代謝に関する研究を通じて、尿中の代謝産物を測定することで、大変多くの生体内栄養素代謝情報が得られることを明らかにしてきた。ヒトを対象とした研究は倫理上制約が多いが、尿は非侵襲性生体試料であること、採尿は対象者自身でも可能であること、という利点に気づき、動物実験で得られた基礎栄養学の知識と技術をもとに、ヒトを対象とした尿を用いる新しいビタミン栄養評価方法を創成し、その活用に関する研究を行っている。

従来の個人の栄養状態の評価では、摂取した栄養素量を「日本人の食事摂取基準」に示された「推奨量」あるいは「目安量」と比較して、「充足している可能性が高い」あるいは「不足している可能性がある」という方法論をとっている。この方法の限界は、①摂取した栄養素量のもととなる食事調査は、対象者となる「いわゆる素人」がおこなうことが多いため精度が低い、②栄養素摂取量の計算は「日本食品標準成分表」に頼らざるをえないため微量栄養素であるビタミンは概数的な数値となる、③自分自身の調査結果の「いいかげんさ」がわかるため、たとえ、悪い評価を受けても、真摯に受け止めない、という点である。

長年、トリプトファンおよびその関連化合物の定量方法を網羅的に開発し、それらの手法を駆使してトリプトファン-ナイアシン代謝経路の制御機構の解明並びに尿中のナイアシン異化代謝産物排泄量比がアミノ酸栄養状態のバイオマーカーとなることなどを中心とした基礎研究を行ってきた。この知識と技術を応用して、ヒトを対象とした介入試験並びに小児、成人、高齢者を対象としたフィールドワーク試験から、尿中のビタミン並びにその関連化合物排泄量は摂取ビタミン量にきわめて鋭敏に応答することを見いだした。さらに、食事摂取基準にしたがった栄養素量の食事（完全合成食）を摂取させた時に排泄されるビタミン並びに関連化合物量から、健康を維持し続けるための目標排泄量を設定した。また、この評価方法は、過剰摂取による健康障害の予防方法としても活用できることも明らかにした。これらの成果の活用として、我が国の自由に生活している人々のビタミン栄養状態の評価を行い、かつ栄養指導を行っている。このような生体情報に基づいた栄養評価を示しつつ行う栄養指導は説得力があり、食生活行動の変容につながりやすい。

3. 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)
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(3) 過去 5 年間の本学会での活動状況

<学会役員等>

平成 19 (2007) 年度 日本栄養・食糧学会創立 60 周年事業実行委員会委員
平成 19 (2007) 年度～平成 23 (2011) 年 8 月 評議員
平成 23 (2011) 年 9 月～現在 代議員

<学会シンポジウム・座長関係>

平成 19 (2007) 年度 創立 60 周年記念市民フォーラム「おこしやす 長寿の秘密の世界へ」
座長
平成 19 (2007) 年度 (第 61 回) 日本栄養・食糧学会大会 一般発表座長
平成 20 (2008) 年度 (第 62 回) 日本栄養・食糧学会大会 一般発表座長
平成 21 (2009) 年度 (第 63 回) 日本栄養・食糧学会大会 一般発表座長
(第 63 回) 日本栄養・食糧学会シンポジウム「ライフステージごとの
ビタミンの食事摂取基準の策定理論」座長
平成 22 (2010) 年度 (第 64 回) 日本栄養・食糧学会大会 一般発表座長
平成 22 (2010) 年度 (日本栄養・食糧学会中部支部シンポジウム)
「水溶性ビタミンの食事摂取基準と話題提供」 講師
平成 23 (2011) 年度 (第 65 回) 日本栄養・食糧学会大会 一般発表座長
シンポジウム (緊急企画) : Emergency Nutrition－災害時にお
ける栄養・食糧問題とその対策を考える」講演

(4) 特記事項

学会受賞歴

日本ビタミン学会 昭和 58 (1983) 年度 奨励賞

「動物および細菌の Quinolinate phosphoribosyltransferase の比較とニコチン酸モノヌクレオチ
ド生合成における活性調節」