

(様式1)

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)	多機能性食品の開発に関する研究		
(英)	Studies on the Development of Multi-functional Foods		
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学 位:	農学博士	最終学歴:	昭和54年3月九州大学大学院農学研究科食糧化学工学専攻博士課程修了
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2. 研究業績要旨(1,000字以内)

本研究者は、食品成分の体調調節機能に関する幅広い研究を行っている。食品成分は、抗酸化成分、不飽和脂肪酸、食物繊維、タンパク質・ペプチド、低分子生理活性物質など、多岐にわたっている。実験技術では、動物培養細胞を食品成分の機能検定系に導入し、生化学および遺伝子工学的技術を駆使して生理活性成分の探索および作用機構解明を行うとともに、動物実験系を用いて摂食効果の検討も行っている。また、摂食記憶の確認を目的として ex vivo 実験系を開発している。生理機能も、制がん、免疫・アレルギー、脂質代謝調節、抗環境ホルモン作用など、多方面にわたって研究を行っている。これらの研究から、各種食品成分が複数の体調調節機能を有すること、複数の生理活性物質を同時に投与することにより相乗効果を発現することを見だし、多機能性食品の構築が可能であることを明らかにしている。また、アレルギー研究では、アレルギー抑制物質を利用した抗アレルギー食品の開発を提唱し、アレルギー患者に豊かな食生活を与えるための研究を行っている。

不飽和脂肪酸では、n-3系多価不飽和脂肪酸および共役リノール酸の多機能性について研究し、制がん、免疫増強、抗アレルギー、脂質代謝調節、抗肥満効果などを報告している。抗酸化ビタミンおよびポリフェノール化合物では、制がん、抗アレルギー、抗環境ホルモン活性を見だし、抗酸化物質を組み合わせることで使用することにより、相乗効果が発現することを報告した。また、茶ポリフェノールと多価不飽和脂肪酸が相乗効果を発現することも報告している。食物繊維の抗アレルギーおよび脂質代謝調節機能では、加齢との関係について追求し、加齢ラットでは食品機能の発現が低下することを明らかにした。

これらの食品成分の作用機構についても検討し、共役リノール酸および抗酸化成分が細胞のシグナル伝達機構に影響を及ぼすことによりその生理活性を発現することを

報告している。細胞レベルの研究と摂食効果は必ずしも一致しないが、実験動物から無菌的に回収した機能性細胞を培養する *ex vivo* 実験系を用い、食品成分の体調節機構を生体レベルで解明する研究も行っている。また、トコトリエノール摂食実験では、ラットの組織により存在量が大きく異なることを見だし、体内動態および代謝に関する研究の重要性を報告している。

### 3. 報文等リスト

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### (3) 過去 5 年間の本学会での活動状況

直近の 5 年間には、九州大学理事教育担当副学長業務に従事していた期間が 3 年間あり、研究および学会活動が非常に制限されていた。本学会関係では、2004 年の 4 月から 2008 年 3 月まで和文誌編集委員を勤め、2006 年に各種受賞等選考委員を勤めた。それ以前には、本部評議員を 2 期 4 年、理事を 1 期 2 年勤めている。

### (4) 特記事項

1987 年 3 月に日本農芸化学会奨励賞を受賞(動物培養細胞の増殖および分化機能発現の調節に関する研究)。

