

(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)	動脈硬化予防に関わる食事因子の研究		
(英)	Basic and clinical nutritional research for preventing atherosclerotic diseases		
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2. 研究業績要旨(1,000字以内)

動脈硬化は日本人の死因の約3割を占める心疾患、脳血管疾患の起因とされるが、その発症には食生活が大きく関わっている。申請者は、脂質代謝に及ぼす影響を中心に、食事因子の抗動脈硬化作用について、臨床的な観点から検討を進めてきた。

1. LDL酸化を抑制する食事因子の検討

動脈硬化進展において、LDLコレステロール濃度が高いことだけでなく、LDLの酸化変性が鍵であることが提唱され、食事中の抗酸化物質の効果が注目されて久しい。申請者はLDL被酸化能の測定として、アゾ化合物を酸化開始剤としたlag time測定系を立ち上げ、食事因子のLDL酸化に対する影響を検討してきた。フレンチパラドックスとポリフェノールの関係に注目し、健常人を対象に赤ワインを2週間投与する介入試験を行い、LDL被酸化能の指標であるlag timeが有意に延長したことを明らかにした。その後ココアについても同様の効果を認めた。また、単回投与においても、緑茶、コーヒー、レモン、ブドウ、バルサミコ酢、シソといったポリフェノールを豊富に含む食品において、摂取後にLDL被酸化能が改善したことを報告した。さらにこれらの食事因子の中には、LDLの酸化を抑制するだけでなく、酸化LDLによる血管内皮機能障害や、マクロファージの泡

沫化に対しても抑制作用を発揮する可能性を示した。

## 2. 食後高脂血症を改善する食事因子の検討

食後に生じるカイロミクロンなどの **TG-rich** リポ蛋白の動脈硬化惹起性が指摘されて以来、食後高脂血症に関する研究が行われるようになった。申請者らは、バターやマヨネーズをパンとともに摂取させる方法で、**30 g** 程度の少ない負荷量でも、血清脂質濃度の顕著な変動が認められることを確認し、食後高脂血症の評価系を確立した。これまでに、赤ワインや緑茶、レモンなどに含まれるポリフェノールが脂質の吸収を抑制し、食後高脂血症を改善することを明らかにしてきた。

一方、脂肪の量だけでなく質にも着目し、高カイロミクロン血症の食事療法に用いられる中鎖脂肪酸について、食後の血清脂質濃度の上昇が抑制され、腹部脂肪の減少が認められたことを報告した。

また近年の研究では、脂肪摂取後に生じる血管炎症に対しても、ポリフェノールが抑制作用を発揮する可能性を示した。

申請者らの研究において、ポリフェノールをはじめとする食事因子は、抗酸化作用や脂質代謝改善作用に加えて、炎症抑制作用など多様な作用機序により動脈硬化予防に寄与する可能性が示された。

## 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

#### ■学会役員

副会長(平成 24、25 年度)、編集理事(平成 22、23 年度)、代議員(～現在)

#### ■各種委員

学会誌編集委員会委員長(平成 22、23 年度)、学会活動強化委員会委員長(～現在)、あり方検討委員会委員(～現在)、用語辞典委員会委員長(～現在)、ACN 組織委員会委員(～現在)

#### ■支部役員

関東支部役員

#### ■大会・支部大会での座長・シンポジスト等

第 65 回大会会頭(平成 23 年)

関東支部主催 第 12 回脂質栄養シンポジウム世話人(平成 22 年)

座長・シンポジスト等、多数

### (4) 特記事項