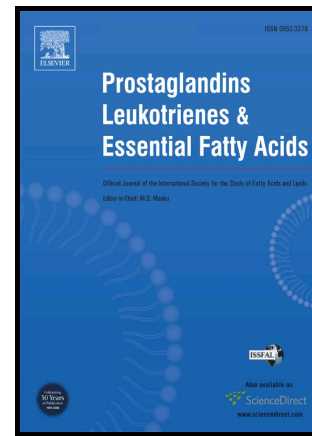


Author's Accepted Manuscript

Arachidonic acid supplementation modulates blood and skeletal muscle lipid profile with no effect on basal inflammation in resistance exercise trained men

James F. Markworth, Cameron J. Mitchell, Randall F. D'Souza, Kirsten M.M. Aasen, Brenan R. Durainayagam, Sarah M. Mitchell, Alex H.C. Chan, Andrew J. Sinclair, Manohar Garg, David Cameron-Smith



PII: S0952-3278(17)30231-4
DOI: <https://doi.org/10.1016/j.plefa.2017.12.003>
Reference: YPLEF1896

To appear in: *Prostaglandins Leukotrienes and Essential Fatty Acids*

Received date: 22 September 2017
Revised date: 2 November 2017
Accepted date: 7 December 2017

Cite this article as: James F. Markworth, Cameron J. Mitchell, Randall F. D'Souza, Kirsten M.M. Aasen, Brenan R. Durainayagam, Sarah M. Mitchell, Alex H.C. Chan, Andrew J. Sinclair, Manohar Garg and David Cameron-Smith, Arachidonic acid supplementation modulates blood and skeletal muscle lipid profile with no effect on basal inflammation in resistance exercise trained men, *Prostaglandins Leukotrienes and Essential Fatty Acids*, <https://doi.org/10.1016/j.plefa.2017.12.003>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Arachidonic acid supplementation modulates blood and skeletal muscle lipid profile with no effect on basal inflammation in resistance exercise trained men

Authors: James F. Markworth¹, Cameron J. Mitchell¹, Randall F. D'Souza¹, Kirsten M.M. Aasen¹, Brenan R. Durainayagam¹, Sarah M. Mitchell¹, Alex H.C. Chan¹, Andrew J. Sinclair², Manohar Garg³, David Cameron-Smith¹

¹Liggins Institute, University of Auckland, New Zealand

²School of Medicine, Deakin University, Geelong, Australia

³Nutraceuticals Research Program, School of Biomedical Sciences & Pharmacy, University of Newcastle, Australia

Corresponding Author:

Professor David Cameron-Smith

The Liggins Institute, University of Auckland,

85 Park Road, Grafton, Private Bag 92019

Phone: 64 9 923 1336

Email: d.cameron-smith@auckland.ac.nz

Abstract:

Arachidonic acid (ARA), an omega-6 polyunsaturated fatty acid (PUFA), is the metabolic precursor to the eicosanoid family of lipid mediators. Eicosanoids have potent pro-inflammatory actions, but also act as important autocrine/paracrine signaling molecules in skeletal muscle growth and development. Whether dietary ARA is incorporated into skeletal muscle phospholipids and the resulting impact on intramuscular inflammatory and adaptive processes *in-vivo* is not known. In the current study, resistance trained men (≥ 1 year) received dietary supplementation with 1.5 g/day ARA (n=9, 24 ± 1.5 years) or placebo (n=10, 26 ± 1.3 years) for 4-weeks while continuing their normal training regimen. Plasma and *vastus lateralis* muscle biopsies were collected in an overnight fasted state at baseline and week 4. ARA supplementation increased plasma content of ARA and gamma-linolenic acid, while decreasing relative abundance of linoleic acid, eicosapentaenoic acid, and dihomo-gamma-linolenic acid. In

Download English Version:

<https://daneshyari.com/en/article/8624648>

Download Persian Version:

<https://daneshyari.com/article/8624648>

[Daneshyari.com](https://daneshyari.com)