



IADR

International Association
for Dental Research

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NEW THERAPEUTIC OPTIONS FOR DIABETES-RELATED TISSUE INJURY

Toronto, ON, Canada – Diabetes mellitus is a metabolic disorder characterized by altered glucose tolerance and impaired lipid and carbohydrate metabolism, and is associated with a number of complications directly resulting from hyperglycemia-induced inflammation. Vascular changes in diabetes lead to increased risk of myocardial infarction and stroke due to atherosclerosis, retinopathy, end-stage renal disease, debilitating neuropathies, poor wound healing, enhanced risk of infection, and periodontal disease. Studies of diabetic complications suggest that activation of the inflammatory response is mediated in large part by phagocytic cells, macrophages, and polymorphonuclear leukocytes. Both cell types assume an aggressive pro-inflammatory phenotype resulting from hyperglycemia.

Today, during the 86th General Session of the International Association for Dental Research, investigators from Boston University report results from a study demonstrating that omega-6 and omega-3 fatty acids are precursors to a powerful new genus of anti-inflammatory and pro-resolution mediators, coined 'resolvins' and 'protectins'. These new local mediators counter-regulate pro-inflammatory signals and return tissues to homeostasis. These mediators reverse several of the pro-inflammatory functional responses of polymorphonuclear leukocytes and macrophages *in vitro* and prevent inflammation in a variety of animal models, and exhibit potential for new therapeutic options for resolving inflammation and tissue injury in diabetes. This research is supported by USPHS Grants DE15566 and RR00533.

About the International Association for Dental Research

The International Association for Dental Research (IADR) is a non-profit organization with more than 10,800 individual members worldwide, dedicated to: (1) advancing research and increasing knowledge to improve oral health, (2) supporting the oral health research community, and (3) facilitating the communication and application of research findings for the improvement of oral health worldwide.

To learn more about the IADR, visit www.iadr.org.

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This is a summary of an abstract entitled "Resolvin-E1 and Lipoxin-A4 Control Pro-inflammatory PMN Functions in Diabetes", by A. Blackwood *et al.*, of Boston University and Harvard University Medical School, to be presented at 3:30 p.m. on Friday, July 4, 2008, in Hall D-E of the Metro Toronto Convention Centre, Toronto, ON, Canada, during the 86th General Session of the International Association for Dental Research.

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