Eicosapentaenoic Acid Inhibited Glucose-Induced Membrane Lipid Peroxidation and Cholesterol Crystalline Domain Formation

R. Preston Mason, Ph.D.1,2, Robert F. Jacob, Ph.D.1

1Brigham and Women’s Hospital, Harvard Medical School, Boston, MA, USA; 2Elucida Research LLC, Beverly, MA, USA

Abstract

Lipidic peroxidation is a process underlying cell injury. A high intake of polyunsaturated fatty acids (PUFAs), such as eicosapentaenoic acid (EPA), has been characterized in patients with diabetes mellitus (DM). However, the mechanisms underlying these effects remain unclear. This study used 2D gel electrophoresis to characterize antioxidant and membrane structural effects of EPA as determined in patient samples. Representative image rotation was performed to maximize the natural reading orientation.