

Asthma abstract Mahmoud

Title;In Vitro Effects of
Astaxanthin Combined With
Ginkgolide B on T Lymphocyte
Activation in Peripheral Blood
Mononuclear Cells From
Asthmatic Subjects

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Abstract;This study was undertaken to identify novel approaches to pharmacological treatment of asthma. Here we hypothesize that the platelet-activating factor receptor antagonist ginkgolide B (GB) in combination with the antioxidant carotenoid astaxanthin (ASX) suppresses T cell activation comparably to two commonly-used antihistamines: cetirizine dihydrochloride (CTZ) and azelastine (AZE). Peripheral blood mononuclear cells from asthmatics, cultured 24 h with either 50 . μ g/ml phytohemagglutinin (PHA) or PHA plus selected dosages of each drug are analyzed by flow cytometry for CD25+ or HLA-DR+ on CD3+ (T cells). Results are reported as stimulation indices (SI) of %CD3+CD25+ cells or %CD3+HLA-DR+ cells in cultures treated with PHA alone versus these subpopulations in cultures treated with both PHA and drugs. Combinations of ASX and GB exhibited optimal suppression at 10⁻⁷ M GB + 10⁻⁸ M ASX for CD3+CD25+ (SI = 0.79 \pm 0.04, P = 0.001) and 10⁻⁷ M GB + 10⁻⁷ M ASX for CD3+HLA-DR+ (SI = 0.82 \pm 0.05, P = 0.004). In conclusion, suppression of T cell activation below fully stimulated values by GB, ASX, and their combinations was comparable and for some combinations better than that mediated by CTZ and AZE.

These results suggest that ASX and GB may have application as novel antiasthmatic formulations.