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### Preclinical and clinical studies with tomato carotenoids to balance blood pressure and skin health

Several human studies have shown that tomato carotenoids can affect various aspects of human health. In this presentation the author will address two issues – a) balancing the response of skin cells to UV irradiation and b) the reduction of elevated blood pressure. a) Several human studies have shown that tomato carotenoids can reduce UV-induced damage by reducing erythema and improving the balance between collagen production and breakdown. We hypothesized that a combination of tomato carotenoids with polyphenols may produce better skin protection than that expected from summation of their activity. Indeed, we found that combinations of tomato nutrient complex (containing lycopene) with rosemary extract (containing the polyphenol carnosic acid) synergistically reduced inflammatory markers and induced antioxidant activity in skin cells leading to reduction of Matrix Metalloproteinases (MMPs) and thus may reduce collagen breakdown and delay skin ageing. b) Essential hypertension is a risk factor for cardiovascular morbidity and mortality. We performed a dose-response analysis to uncover the optimal effective dose of a tomato nutrient complex supplement in maintaining normal blood pressure among hypertensive individuals. Results indicate that treatment for 8 weeks with tomato nutrient complex standardized to contain 15 mg or 30 mg of lycopene was associated with significant reductions in systolic blood pressure. Treatment with lower dose or treatment with 15 mg of synthetic lycopene as a standalone did not show a significant effect. The human bioavailability of the major tomato carotenoids lycopene, phytoene and phytofluene was dose-dependent following treatment with different doses of the tomato nutrient complex.

### Biography

Yoav Sharoni received his PhD degree from the Hebrew University of Jerusalem. He was a Researcher at Duke University and Burroughs Wellcome drug company, NC, USA and a Visiting Professor at the NIH, MD USA. He is a Professor in the Department of Clinical Biochemistry and Pharmacology, Faculty of Health Sciences, Ben Gurion University of the Negev, Beer-Sheva, Israel. He has published more than 70 papers in reputed journals and serves as a Scientific Consultant for Lycored Ltd., A food supplement company which originated in Israel and is now spread all over the world.

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