Nitsa Mirsky, Altern Integr Med 2016, 5:3(Suppl)
http://dx.doi.org/10.4172/2327-5162.C1.017

Inhibition of diabetic cataract by glucose tolerance factor (GTF) extracted from yeast

Nitsa Mirsky
University of Haifa, Haifa, Israel

Cataract formation is one of severe diabetes complications. Hyperglycemia brings to increased polyol concentration in the lens, to glycation of lens proteins, and to elevated oxidative stress. The Glucose Tolerance Factor is a yeast derived material that decreased hyperglycemia and oxidative stress both in diabetic animals and humans. We studied the protective effect of GTF on the eye lens both *in vivo* and *in vitro*. Streptozotocin (STZ) diabetic rats received 15 oral doses of GTF. While diabetic untreated rats developed cataracts, the development of cataract was totally or partially prevented in GTF treated animals. *In vitro* studies were done on bovine lenses incubated for 14 days. Half of the lenses were incubated in normal glucose conditions, and half in high glucose conditions. To one group of the normal or high glucose condition GTF was added. The optical quality of all the lenses was measured daily by an automated scanning laser system. The control lenses, whether with or without GTF addition, kept their optical quality. High glucose conditions induced optical damage to the lenses. Addition of GTF prevented this damage. High glucose conditions affected the activity of aldose reductase and Na/ K ATPase in lens epithelial cell. Addition of GTF decreased these destructive changes. The amount of soluble cortical lens proteins was decreased and structural changes were detected in lenses incubated in high glucose medium. These changes could be prevented when GTF was added to the high glucose medium. Our findings demonstrate the anti cataractogenic potential of GTF.

Biography

Nitsa Mirsky completed her PhD studies at the Technion, Israel, and her Postdoctoral studies at Stanford university. Through her long academic career she investigated anti diabetic natural compounds activity both *in vivo* and *in vitro*. She was the founder and president of "Natural Compounds", a company that developed anti diabetic agents from natural sources. Dr. Mirsky has been a member of the Faculty of Natural Sciences at the university of Haifa, where she served also as the head of the department of biology. She supervised dozens of M.Sc and Ph.D students and published many articles in the field of diabetes.

nmirsky@bezeqint.net

Notes: