



Serum Markers of the Liver, Heart, and Kidney and Lipid Profile and Histopathology in ODS Rats Treated With Nutrient Synergy (2003)

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Abstract

Nutrient Synergy, a specific mixture of ascorbic acid, lysine, proline and green tea extract, has potent anti-metastatic activity. Studies were designed to investigate whether Nutrient Synergy (NS) has an adverse effect on liver, heart, and kidney functional serum enzymes, lipid profile, and histopathology. Adult female ODS rats weighing 250-300 gm were gavaged with NS 30, 90 and 150 mg, or with saline (control) daily for seven days. The rats were euthanized, blood was drawn, and the serum was analyzed for various biochemical parameters. Liver function: No difference was observed in protein, albumin (A), globulin (G), A/G ratio, alkaline phosphatase and aspartate aminotransferase (AST) between treated and control groups. However, alanine aminotransferase slowly decreased with increased dose of NS. Heart function: Lactate dehydrogenase, creatine kinase, and AST in test groups did not differ from control groups. Kidney function: Creatinine content was the same for the test and control groups. Uric acid however, showed a gradual non-significant increase, and BUN, a decrease, as did the B/C ratio, with an increased concentration of NS. Lipid profile: In test groups, both cholesterol and triglyceride levels decreased compared to control groups. Histopathology: Consistent with the serum markers, there was no difference in the histopathology of liver, kidney, heart, and lung compared to control groups and amongst test groups. These results demonstrate that Nutrient Synergy has neither adverse effects on vital organs nor on the associated serum enzymes, and is therefore, safe to use even at these high doses, which far exceed the normal dosage of the nutrient.

Comments

Nutrient Synergy has been shown in previous studies to have potent anti-metastatic activity. To address safety issues, our research team studied the effect of feeding different levels of this nutrient mixture for seven days on the clinical chemistry of adult female ODS rats, such as functional serum enzymes of the liver, heart, and kidney, as well as lipid profile and histopathology. Study results demonstrate that not only is Nutrient Synergy safe at higher doses, but also is associated with improved cellular functions in various organs in the body.

Nutrient Synergy: Safety Test

What was measured:	Control	Treated with NS (Equivalent Dose = 30 TBS/day)	Health Consequence
Liver Function			
SGOT	134 IU	118 IU	Improvement
SGPT	82 IU	47 IU	Improvement
Heart Function			
LDH	597 IU	552 IU	Improvement
Kidney Function			
BUN	20 mg/dl	12.8 mg/dl	Improvement
Lipid profile			
Cholesterol	927 mg/dl	62 mg/dl	Improvement
Triglycerides	121 mg/dl	89 mg/dl	Improvement