



## OTHER SUPPORT:

*GRAMINEX Flower Pollen Extract*

### Pollen as a Cholesterol-Lowering Agent

**P.A. Öckerman**

**M.D., Professor**

Department of Clinical Chemistry

University Hospital

S-221 85 Lund, Sweden

#### **Cernilton**

Each capsule contains 60 mg of a water-soluble extract (Cernitin T 60) from flower-pollen and 3 mg of a lipid-soluble extract (Cernitin GBX). Flower-pollen has been purified of pollen-capsules and partially hydrolyzed, to obtain a pure preparation which does not give rise to allergic reactions. This preparation is different from bees-pollen that is more heterogeneous and more allergenic.

#### **Cernitromb:**

Each capsule contains Cernitin T 60, 120 mg and Cernitin GBX, 6 mg.

Both Cernilton and Cernitromb are registered as “naturmedel” (naturopathic remedies) by the Swedish State Medical Board.

Dosage: Four capsules daily for two months.

Analyses: Cholesterol, HDL-cholesterol, LDL-cholesterol and triglycerides were assayed in fasting plasma by routine methods at the Department of Clinical Chemistry, University Hospital, Lund. For fractionation of cholesterol a simple precipitation method was used.

#### **Results**

As evident from Table I a significant decrease of 11-13 percent was noted for plasma-cholesterol both with Cernilton and Cernitromb, perhaps slightly more so with Cernitromb. No change was seen in the placebo group.

The decrease was explained exclusively by a 17-18 percent decrease of LDL-cholesterol with no change or a slight increase for HDL-cholesterol. There was no significant change of plasma triglyceride levels. The preparations were well tolerated and no side-effects could be recorded.

TABLE I

Plasma lipid levels during treatment with pollen.  
All values given as mmol/l.

		0 months	2 months	p-value
P-cholesterol	Placebo (n = 18)	7.73	7.77	n s
	Cernilton (n = 20)	7.67	6.81	< 0.001***
	Cernitromb (n = 20)	7.68	6.68	<0.001***
P-HDL-cholesterol	Placebo	1.29	1.32	n s
	Cernilton	1.10	1.21	< 0.05*
	Cernitromb	1.25	1.27	n s
P-LDL-cholesterol	Placebo	5.85	5.87	n s
	Cernilton	5.95	4.95	< 0.001***
	Cernitromb	5.74	4.73	< 0.001***
P-Tri-glycerides	Placebo	1.39	1.30	n s
	Cernilton	1.39	1.37	n s
	Cernitromb	1.94	1.84	n s

P-values denote comparison between time 2 months and 0 months.

n s = not significant

\* = significant change at the 5 percent level.

\*\*\* = significant change at the 0.1 percent level.

## Discussion

Our result supports those of Kosmider et al (6) as regards P-cholesterol levels. The Polish group found a more marked decrease with a higher dose (six capsules). Possibly, our results might indicate a slightly better effect with the higher dose.

The decrease in cholesterol noted in this study was explained by a decrease only in the LDL-fraction, sometimes called "the bad cholesterol". This should imply a reduced risk for atheromatosis and cardiovascular disease. The fact that the HDL-fraction did not decrease or even increased slightly would tend to reinforce the positive effect of this treatment.

Pollen in the preparation used here has been used for many years. It has been shown to be effective in prostatitis and prostatic hyperplasia (7), to reinforce immunological defense mechanisms (8) and improve personal capacity (9). Flower-pollen, in conclusion, would be a very interesting natural product. Its effects on plasma cholesterol may come to be of great value, considering the very large need for a lowering of cholesterol levels in the population by means of simple and safe agents in addition to improved diet.

## References

1. Prevention of coronary heart disease. Who Technical Report Series 678, 1982.
2. Öckerman P. A., Glans, S., Rassner S.: Glucomannan som kolesterolsäkande medel. Biologisk medicin, In press, 1986.
3. Horrobin D. F., Manku M.S.: How do polyunsaturated fatty acids lower plasma cholesterol levels? Lipids 18: 558-562, 1983.
4. Soyalecithin dietetic applications (Editors: J N Hawthorne, D Lekim). Semmelweis-Verlag, 1982.
5. Lau BHS, Adetumbi M. A, Sanchez A.: Allium saivam (garlic) and atherosclerosis: a review. Nutr Res 3: 119, 1983.
6. Kosmider K., Wojcicki J., Samochowiec L., Woyke M., Gornik W.: Effect of Cernilton on platelet aggregation in vivo. Laboratory of Clinical Pharmacology, Medical Academy, Szczecin, Poland; Herba Polonica, No 3-4, p. 237-240, 1983.
7. Ebeling L.: Pollen helfen bei prostatitis und Adenom. Ärztliche Praxis 1955: 23, 29-31.

8. Itoh R.: Studio farmacologico sul Cernitin GBX e Cernitin T60, La Clinica Terapeutica, Vol. 54, Fasc. 3-p. 205-236, 1970.
9. Dubrisay J.: A new approach to the natural treatment of protein malnutrition results of a double-blind clinical trial.
10. L. Samochowiec, J. Wojcicki: Influence of Cernitin extracts on serum and liver lipids in rats, fed on a high-fat diet; Laboratory of Clinical Pharmacology, Medical Academy, Szczecin, Poland; Herba Polonica, No. 2, p 165-170, 1983.
11. J. Wojcicki, L. Samochowiec: Further studies on Cernitins: screening of the hypolipidemic activity in rats; Laboratory of Clinical Pharmacology, Medical Academy, Szczecin, Poland; Herba Polonica, No. 2, p 115-121, 1984.
12. J. Wojcicki, K. Kosmider, L. Samochowiec, M. Woyke: Clinical evaluation of Cernilton as lipid-lowering agent; Laboratory of Clinical Pharmacology, Medical Academy, Szczecin, Poland; Herba Polonica No. 1, 9 55-63, 1983.
13. J. Wojcicki, L. Samochowiec: Effect of Cernilton on the hepatotoxicity of carbon tetrachloride (CCl<sub>4</sub>) in rats; Laboratory of Clinical Pharmacology, Medical Academy, Szczecin, Poland, 1981, Herba Polonica, No. 3-4, p 207-212, 1984.
14. Robert I. Levy, M.D.: Primary prevention of coronary heart disease by lowering lipids: Results and implications;
15. Columbia University, Dept. of Medicine, New York, USA; American Heart Journal; Nov. 1985, Vol. 110, No. 5, p 1116-1122.

### CERNILTON

Initials	Sex	Age	Kolesterol 0-2		HDL- Kol. 0-2		LDL- Kol. 0-2		Triglycerides 0-2 months	
E.A.	F	70	7.50	6.08	1.20	1.39	6.00	4.25	1.40	0.98
S.A.	M	61	7.26	7.36	0.88	0.98	5.94	5.79	0.98	1.31
H.A.	F	70	7.54	7.24	1.32	1.66	5.10	4.96	1.55	1.37
S.E.B.	M	51	6.86	6.35	1.16	1.39	5.26	4.59	0.97	0.82
E.M.B.	F	55	7.30	7.19	1.40	1.17	5.86	5.55	0.70	1.04
B.B.	M	43	7.82	7.08	1.18	1.27	6.28	5.28	0.95	1.18
J.E.	F	70	7.92	6.49	1.39	1.58	5.73	4.49	0.92	1.01
B.G.	F	58	7.70	7.35	1.09	1.81	5.71	5.15	0.67	0.86
D.H.	F	70	8.67	7.55	0.97	1.14	6.74	5.34	2.14	2.37
A.J.	F	69	10.5	8.93	0.71	0.73	8.04	6.89	3.88	2.92
K.J.	M	60	7.48	5.77	1.27	1.21	5.76	4.25	1.00	0.69
S.J.	M	57	8.26	6.62	1.61	1.33	6.22	4.68	0.95	0.94
I.K.	M	58	7.54	5.83	0.91	1.07	6.06	3.92	1.27	1.86
G.K.	F	66	7.25	6.58	0.91	1.07	5.98	4.67	1.97	1.73
L.L.	M	53	6.50	6.16	0.91	1.13	4.76	6.60	0.95	0.96
L.N.	F	70	7.91	7.08	1.19	1.37	6.19	4.76	2.14	1.19
N.N.	M	70	7.85	7.36	1.00	0.99	6.13	5.69	1.28	1.37
E.P.	M	63	7.41	5.78	1.09	0.86	5.98	4.55	0.75	0.83
B.S.	M	63	6.60	6.10	1.10	1.16	5.20	4.66	0.80	0.62
K.S.	M	46	8.01	7.30	0.79	0.86	6.13	--	2.42	--
Mean			7.67	6.81	1.10	1.21	5.95	4.95	1.39	1.37
p			< 0.001		< 0.05		< 0.001		n.s.	

## CENTRITROMB

Initials	Sex	Age	Kolesterol 0-2		HDL- Kol. 0-2	LDL- Kol. 0-2	Triglycerides 0-2 months			
I.A.	F	65	7.10	6.41	1.10	0.90	5.30	4.86	1.50	1.46
K.A.	F	62	8.05	6.72	1.10	1.10	6.94	4.88	2.96	1.99
U.A.	F	60	7.55	6.46	1.50	1.49	5.36	4.48	1.47	1.40
A.A.	M	69	7.52	6.21	1.44	0.95	5.49	4.51	1.31	1.66
B.B.	M	57	8.05	7.52	1.63	1.53	6.05	5.59	0.83	0.89
E.B.	M	51	6.60	6.83	1.40	1.44	4.80	5.00	0.96	0.86
I.B.	F	70	7.22	6.84	1.89	1.89	4.37	4.54	1.55	1.23
P.C.	M	65	7.81	6.53	0.72	0.93	5.99	4.50	2.33	2.74
B.H.	M	53	8.10	6.72	1.13	1.09	6.24	4.90	2.34	2.11
C.N.	M	45	6.50	6.15	0.67	0.58	2.92	--	5.36	6.04
H.N.	M	64	7.05	6.10	0.75	0.78	5.44	4.52	2.21	2.09
S.O.	M	65	6.50	5.30	0.91	0.90	3.83	3.18	3.04	2.72
K.O.P.	M	64	8.64	6.87	1.09	0.86	5.30	4.35	5.00	3.68
K.P.	M	60	7.44	6.50	1.58	1.40	5.45	4.61	0.90	1.09
N.P.	F	66	8.86	7.30	1.43	3.30	6.95	3.71	1.07	0.64
I.S.	F	58	8.01	7.37	1.69	1.63	5.84	5.30	1.38	1.30
G.S.	F	70	9.19	7.64	1.42	1.24	7.01	5.68	1.69	1.59
A.G.S.	F	62	7.30	6.04	1.40	1.31	5.35	4.25	1.23	1.07
Y.S.	M	60	7.70	6.80	1.20	1.20	6.20	5.13	0.80	1.04
M.S.	F	68	8.80	7.28	0.96	0.84	7.14	5.90	1.56	1.20
Mean			7.68	6.68	1.25	1.27	5.74	4.73	1.94	1.84
P			< 0.001		n.s.		< 0.001		n.s.	

## PLACEBO

Initials	Sex	Age	Kolesterol 0-2		HDL- Kol. 0-2	LDL- Kol. 0-2	Triglycerides 0-2 months			
S.E.A	M	46	6.50	6.21	0.70	0.81	3.70	4.37	4.10	2.28
I.B.	F	68	7.38	8.05	0.94	1.07	5.58	5.72	1.92	2.81
K.E.B.	M	51	7.40	6.50	1.00	0.94	5.30	4.80	2.50	1.68
G.B.	F	57	7.32	7.97	1.75	1.86	5.25	5.71	0.71	0.89
M.D.	F	62	8.24	8.05	1.65	1.42	6.19	6.26	0.88	0.82
L.E.	M	56	7.51	7.91	1.03	1.20	5.81	6.15	1.48	1.24
L.G.	M	63	7.48	7.78	1.10	1.12	6.01	6.04	0.81	1.38
M.G.	F	52	7.26	7.54	0.99	1.32	5.72	5.67	1.23	1.23
A.I.	F	54	7.90	7.98	1.03	1.11	6.10	5.67	1.70	2.66
G.J.	M	59	8.48	8.58	1.21	1.08	6.44	6.86	1.84	1.41
C.J.	M	61	7.71	7.41	1.49	1.66	6.11	5.59	1.12	0.74
L.L.	F	70	7.11	6.86	1.05	1.13	5.81	5.27	1.40	1.02
B.L.	F	45	6.81	6.86	0.98	1.30	5.41	5.26	0.94	0.66
M.L.	F	63	9.01	8.91	1.87	1.59	6.83	7.02	0.69	0.67
I.N.	F	65	9.91	10.4	1.58	1.41	7.85	8.55	1.05	0.98
I.N.	F	68	8.10	8.04	1.51	1.57	6.01	6.01	1.30	1.02
K.S.	F	52	8.55	8.19	1.95	1.99	6.26	5.70	0.75	1.10
M.S.	F	68	6.60	6.64	1.31	1.20	4.98	5.08	0.68	0.80
Mean			7.73	7.77	1.29	1.32	5.85	5.87	1.39	1.30
p			n.s.		n.s.		n.s.		n.s.	