A Newly Developed Soy Based Dietary Supplement Abacor® Compared with Casein Attenuates Aortic Cholesterol Accumulation in Rabbits Clamped at the Same Hypercholesterolemic Level

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Abacor (NutriPharma) is a dietary supplement containing isolated soy protein (supro soy) with standardized high levels of isoflavones, cotyledon soy fibre and soy phospholipids. In previous experiments Abacor had in comparison with casein a strong dose dependent plasma cholesterol lowering effect in rabbits fed cholesterol enriched diet. We now want to investigate if Abacor in addition has a direct effect on cholesterol accumulation in the arterial wall not mediated by plasma cholesterol lowering.
Four groups each with 20 male rabbits were fed a diet enriched with 80% Abacor, 40% Abacor, 40% casein and 40% casein. The latter group received estrogen injections intramuscularly biweekly and was included as a positive control, since estrogen is known to have a direct antiatherogenic effect on the arterial wall in cholesterol fed rabbits. All 60 rabbits were maintained at the same elevated plasma cholesterol level of about 20 mmol/l for 75 days by individualized cholesterol feeding procedure.
The rabbits receiving 80% Abacor and the rabbits receiving estrogen required in average twice and three times as much dietary cholesterol respectively as the rabbits receiving only casein. The aortic cholesterol concentrations in nmol/mg (SE) tissue were 6.5 (0.7), 7.8 (0.9), 10.2 (1.0) and 7.5 (0.6) in the 80% Abacor, 40% Abacor, the casein group and in the estrogen group, respectively with a significant difference ($p<0.01$) between the rabbits receiving 80% Abacor and casein + estrogen compared with the rabbits receiving only casein.
Abacor thus reduces plasma cholesterol and in addition it attenuates cholesterol accumulation in the arterial wall beyond that which can be ascribed to its plasma cholesterol lowering effect. The plasma cholesterol clamped rabbit may be useful for identification of the ingredient(s) in soy products responsible for the direct effect on the arterial wall. The present findings also suggest that investigation of soy products in humans should include its effect on endothelial function.

Disclosures
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Lars Høie owns shares in NutriPharma.
Steen Stender is an ad hoc member of the external scientific board of NutriPharma