

ANTIINFLAMMATORY PROPERTIES OF PEPTIDE COMPLEX OBTAINED FROM THE COD LIVER (GADIDAE) ON THE MODEL OF ADJUVANT ARTHRITIS IN THE RAT

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The aim of the study was to evaluate the antiinflammatory activity of newly designed multi-peptide complex (PC) obtained from the cod liver (Gadidae). PC is a standardized extract that contains peptides, phospholipids, free amino acids and micro-elements. Animal models of rheumatoid arthritis (RA) are used extensively in study of pathogenesis of inflammation and the testing of potential anti-arthritic agents. One of the widely used models of RA is adjuvant arthritis in the rat. Experiment was performed on 60 female Wistar rats (180–220g) and was approved by the local ethical commission. RA was induced by subplantar injection into the right hind paw of 100 µl complete Freund adjuvant (CFA, Sigma Aldrich). The pathological signs of RA was developed during the 21 days. Temperature of the paw, leucocytes in the blood were registered to evaluate the pharmacological activity of the tested medicines. Chondro- and osteoprotective effects were evaluated by X-ray study. The experiment

rats were randomly divided into the six groups (n = 10) as follows: negative control group (normal rats without any treatment and RA pathology), positive control group (RA and with placebo treatment), RA+Alflutop (RA pathology with 0,1 mg/kg of anti-inflammatory medicine Alflutop treatment), three groups of RA and PC treatment (RA pathology and PC in doses 0,1; 0,2 and 0,4 mg/kg treatment). Drug administration was performed by intramuscular injection during 21 days (from the first day of experiment once a day). The results shown that PC in the dose of 0,1 mg/kg has the extensive anti-exsudative effect. Volume of the affected paw was reduced by 70% compared with the control group. According X-ray analyse PC has hondro- and osteoprotective effects. Thus, the newly designed multi-peptide complex (PC) obtained from the cod liver (Gadidae) have high anti-inflammatory activity and is perspective candidat for the chronic inflammation treatment.

INGREDIENTS AND RAW MATERIALS FOR THE DESIGN OF LOW COST FOODS

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Development of appealing, affordable and healthy food products that can prevent common nutritional problems in people at risk of poverty are the specific goals of the European Commission-funded project *CHANCE* (GA 266331). *CHANCE* project is focused to exploring low cost technologies and ingredients, such as by-products rich in fibre, protein and/or vitamins. To obtain the

high dietary fibre ingredients designed for application in meat products two additives were prepared from sugar beet pulp: non-treated fibre (NTF) and treated fibre (TF), and compared with the commercially available product (CAF). Apart from the functionality arising from the high dietary fibre content of the obtained additives, functionality related to the antioxidant activity has been shown to

Table 1. Total phenolic and ferulic acid content in extractable and nonextractable fractions (mg/100 g), (M ± m)

	CAF	TF	NTR
Total phenolics in extractable fraction	21.9 ± 0.7 ^a	8.4 ± 0.5 ^a	27.2 ± 0.9 ^a
Total phenolics in nonextractable fraction	391 ± 59 ^c	109 ± 3 ^b	265 ± 50 ^d
Content of extractable ferulic acid	0.11 ± 0.03 ^a	0.30 ± 0.10 ^a	1.02 ± 0.2 ^a
Content of nonextractable ferulic acid	305.1 ± 68.2 ^c	102 ± 26 ^b	255 ± 58 ^d

Means in each row followed by the same superscript are not significantly different, $P < 0.05$.