

Poster – [A-10-281-2]**Growth promoting effects of the probiotic Protexin in common carp (*Cyprinus carpio*)**

Asadian Maryam, Alishahi Elias, Shahsavani Davar, Kazerani Hamidreza
School of Veterinary Medicine, Ferdowsi University of Mashhad,
Mashhad, Iran

E-mail addresses: ma_as836@yahoo.com (A. Maryam),
dr.elyas.al@gmail.com (A. Elias)

The probiotic Protexin has shown beneficial effects in growth parameters of various food animals. In this research, growth promoting effects of Protexin was investigated in common carps. Accordingly, 164 fish (7.5 ± 0.3 g) were randomly allocated to 4 experimental groups. The first group received placebo and served as the negative control. The second group received the prebiotic Fermacto at 3 mg/g diet and was considered as the positive control. The remaining 2 groups received Protexin at 75 and 150 mg/kg feed, respectively. The body weights and lengths of all fish were measured at the end of the experiment (day 45). Protexin, at 75 mg/kg feed, significantly increased the body weights of fish ($p < 0.001$). A similar significant effect ($p < 0.05$) was observed in total lengths of the fish in the same group. Consistently, the feed conversion rate was lower in the latter group. This is while the effects of Fermacto were not statistically significant in either of the measured parameters. The present study suggests that Protexin, at 75 mg/kg feed, is effective in improving the growth and feed conversion rates of common carp.

Keywords: Protexin, Probiotic, Fermacto, *Cyprinus carpio*, Feed conversion rate

doi:[10.1016/j.clinbiochem.2011.08.545](https://doi.org/10.1016/j.clinbiochem.2011.08.545)

Poster – [A-10-436-1]**Determination of fatty acid composition of human milk in women referred to the health care centers of south of Tehran**

Sedigheh Soleimani, [Shahnaz Khaghani](#), Narjes Ardestani, Hoda Boshehri, Parastoo Asa, Hossein Mirmiranpoor, Azar Shams, Azam Baheiraei, Khosrou Abdi

Faculty of Medicine, Department of Biochemistry, Tehran University of Medical Sciences, Tehran, Iran

E-mail address: khaghani@tums.ac.ir (S. Khaghani)

Introduction: Human milk contains large quantity of fatty acids that prevent and suppress autoimmune disease. It is shown that these kind of fatty acids used by children have an important role in the prevention of asthma, type I and type II diabetes, metabolic syndrome x, cardiovascular disease, lymphoma, leukemia and other cancers, schizophrenia, depression, autoimmune disease and some light inflammation. Due to the important role of fatty acids in mothers' milk assessing their quantities is essential and helps to improve its sufficiency.

Methods: In this study 43 mothers referred to the health care centers of south of Tehran were examined. 20 ml of milk was lactated from each mother and after that some questioners were completed according to their age and some other features like BMI. Breakfast samples of human milk were protected to analyze time in -20°C . Measuring of fatty acids was done by gas chromatography.

Results: C12:0 fatty acid concentration rate in human milk was 43.9 ± 7.5 mg/ml, C13:0 fatty acid concentration rate 0.5 ± 0.2 mg/ml, C14:0 fatty acid concentration rate 59.8 ± 13.7 mg/ml, C14:1 fatty acid concentration rate 1.6 ± 0.9 mg/ml, C15:0 fatty acid concentration rate 4.9 ± 1.8 mg/ml, C16 fatty acid concentration rate 212.7 ± 96.1 mg/ml, C16:1 fatty acid concentration rate 4.2 ± 1.7 mg/ml C17 fatty acid concentration rate 5.5 ± 2.7 mg/ml, C18:0 fatty acid concentration rate 77.3 ± 19.1 , mg/ml, C18:1 fatty acid concentration rate 31.1 ± 13.9 mg/ml, C18:2 fatty acid concentration rate 1.6 ± 0.5 mg/ml, C18:2 fatty acid concentration rate $1.6 \pm$

0.5 mg/ml, C18:3n6 fatty acid concentration rate 1.6 ± 0.9 mg/ml, C18:3n3 fatty acid concentration rate 9.1 ± 3.0 mg/ml, C20 fatty acid concentration rate 2.0 ± 0.9 mg/ml, C20:1 fatty acid concentration rate 5.3 ± 2.7 mg/ml, C20:2 fatty acid concentration rate 3.2 ± 1.2 mg/ml, C20:4n6 fatty acid concentration rate 3.2 ± 1.2 mg/ml, C24:0 fatty acid concentration rate 0.2 ± 0.1 mg/ml. Measuring the fatty acid concentration rate of C4, C6, C11 was impossible by this method.

Discussion: The highest rate of fatty acid in human milk was related to saturated acids like C16:0 (212.7 ± 96.1 mg/ml) and C18:0 (77.3 ± 19.1 mg/ml). As fatty acids in human milk are in four types: saturated, monounsaturated, 3-n polyunsaturated and 6-n polyunsaturated, we can conclude that the quality and quantity of fatty acids in human milk are related to their quantity in mothers' dietary. In this study high rates of C16:0 (palmitic acid) and C18:0 (stearic acid) that are saturated can be a fat pattern of mothers' dietary that must be considered in the next dietary study. Conclusion: The most concentrated rate of fatty acid in human milk was for C16:0 and C18:0 when they are in saturated form.

Keywords: Human milk, Human feeding, Human milk fatty acid

doi:[10.1016/j.clinbiochem.2011.08.546](https://doi.org/10.1016/j.clinbiochem.2011.08.546)

Poster – [A-10-529-1]**Effect of margarine on liver enzymes (ALT and AST) in rats**

[Salemi Zahra](#)

Arak University of Medical Sciences, Arak, Iran

E-mail address: zsalemi@ibb.ut.ac.ir

Introduction: Margarine contain trans fatty acids as major sources of dietary free radicals, and oxidative stress. Effect of oral administration of margarine on hepatic enzyme was investigated in Wistar rats.

Methods: Thirty two (32) adult Wistar rats were uniformly divided into 2 groups of control and margarine (sixteen rats each group (8 males and 8 females). Margarine was added to the second groups chow as 15% (w/W). After 4 months, their blood samples were obtained and the plasma levels of ALT and AST were measured.

Result: Serum level of ALT and AST in margarine group was higher than control groups, but it was not significant. Treatment of rats with margarine did not significantly alter the serum levels of liver enzymes in all groups.

Conclusion: This result suggested that consumption of margarine may not be toxic at the doses investigated.

Keywords: Margarine, AST, ALT

doi:[10.1016/j.clinbiochem.2011.08.547](https://doi.org/10.1016/j.clinbiochem.2011.08.547)

Poster – [A-10-532-2]**EUK-8 reduced oxidative stress in an experimental model of nonalcoholic steatohepatitis**

[RezAzadeh Alireza](#), Yazdanparast Razieh

Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran

E-mail addresses: arezAzadeh@ibb.ut.ac.ir (R.A. Alireza),

yazdan@ibb.ut.ac.ir (Y. Razieh)

Introduction: Nonalcoholic steatohepatitis (NASH) defined as intrahepatic fat accumulation with inflammation in nonalcoholic patients. NASH is a state of nonalcoholic fatty liver disease. NASH has been estimated to affect around 5% of the total population. Currently the precise mechanism for this liver entity is still poorly understood but the overproduction of reactive oxygen species (ROS) has a critical role.

Material and methods: We applied EUK-8, a superoxide dismutase/catalase mimetics, and vitamin C as a standard antioxidant, in rats fed by

a methionine-choline deficient (MCD) diet. The rats were randomly assigned to receive vitamin C, EUK-8 (n = 5, 30 mg/kg/day) or vehicle orally. We measured the hepatic lipid peroxidation (LPO) and protein carbonyl (PCO) content as two oxidative stress markers.

Results: The MCD diet increased the extent of LPO and PCO relative to the control. However, EUK-8 and vit. C reduced lipid peroxidation and protein carbonyl content by 76%, 68% and 55, 65%, respectively in MCD-fed rats. Histopathological examination revealed that EUK-8 improved hepatic features of NASH in MCD-fed rats. Mild ballooning degeneration, focal steatosis (less than 5%) and focal inflammation were observed in EUK-8 treated rats.

Conclusion: Our results indicate hepatoprotective effect of EUK-8 in prevention of nonalcoholic steatohepatitis in MCD fed rats.

Keywords: Oxidative stress, Nonalcoholic steatohepatitis, Superoxide dismutase mimetic, Hepatic lipid peroxidation, Protein carbonyl content

doi:10.1016/j.clinbiochem.2011.08.548

Poster – [A-10-540-2]

Maternal and neonatal serum concentrations of zinc and copper in preterm delivery: An observational study

Boskabadi Hassan

Mashhad University of Medical Science, Mashhad, Iran

E-mail address: Boskabadih@mums.ac.ir

Introduction: Role of zinc and copper for maternal and fetal health, their association with preterm delivery is not well established. To determine the relationship between preterm birth and maternal and neonatal zinc and copper status.

Materials and methods: This case-control study consisted of 53 neonates with gestational age <37 weeks and 74 infants with ≥37 weeks and their mothers as case and control group, respectively. Cord and maternal serum samples were collected at delivery and analyzed by atomic absorption spectrophotometry for zinc and copper levels.

Results: Maternal samples contained significantly lower zinc but higher copper concentrations compared to cord samples in the overall population (p<0.001). Mean maternal serum zinc concentrations in the case group were significantly lower than that of the control group (p<0.01). With respect to the cord samples, preterm neonates had significantly lower copper concentrations compared to term neonates (p<0.001). No significant difference in maternal copper and cord zinc concentrations was observed between the groups. Mean zinc/copper ratio was found to be significantly higher in preterm neonates (p<0.001) while there was no significant difference between maternal samples.

Conclusion: Maternal zinc and neonatal copper concentrations are reduced in preterm delivery. These findings may provide some evidence for a possible association between the alterations in the trace elements status and preterm birth.

Keywords: Zinc, Copper, Preterm birth, Trace elements

doi:10.1016/j.clinbiochem.2011.08.549

Poster – [A-10-599-2]

The effects of theaflavins on low density lipoprotein oxidation by model system in vitro

Safari Mohammad Reza

Department of Laboratory Medicine, Paramedicine Faculty, Hamedan University of Medical Sciences and Health Services, Hamedan, Iran

E-mail address: safarimr2000@yahoo.com

Background: The oxidation reaction of low density lipoprotein (LDL) is greatly accelerated and is important in the pathogenesis of atherosclerosis. The aim of this study was to investigate the effects of theaflavins on LDL oxidation as in vitro.

Methods: First, LDL was isolated by sequential density ultracentrifugation from normolipidemic human plasma. Then, cupric sulfate was added to LDL fraction and LDL oxidation level was estimated without and with various concentrations of theaflavin, theaflavin monogallate and theaflavin digallate by measuring conjugated diene(CD), lipid peroxides and thiobarbituric acid-reactive substances(TBARS).

Results: I showed that theaflavins significantly (P theaflavin monogallate > theaflavin).

Conclusions: These findings raise this LDL exposed to theaflavins in vitro reduced oxidizability. These findings raise the possibility that theaflavins have a role in ameliorating atherosclerosis.

Keywords: Low density lipoprotein, Oxidation, Theaflavins

doi:10.1016/j.clinbiochem.2011.08.550

Poster – [A-10-605-2]

Relation between cobalamin (Vit. B12) and folate deficiency and neurocognitive markers in the elderly in Mashhad, Iran

Manavifar lida

Mashhad University of Medical Sciences, Mashhad, Iran

E-mail address: manavifar@mums.ac.ir

Introduction: In the elderly, high incidence of neurocognitive and psychologic disorders can be related to high serum homocystein (Hcy) or Vit. B12 (cobalamin) and folate status. In this study relation between Hcy, Vit. B12, folate and neurocognitive-psychologic markers is assessed.

Materials and methods: In this cross-sectional study, 300 people over 65 years old admitted to Emam Reza (p.b.up) hospital in the twelve regions of Mashhad city. After blood sampling, a practitioner physically examined them and obtained other data by questionnaire and doing neurocognitive and psychologic tests. In 250 persons serum cobalamin and folate were measured by RIA method. In 78 persons, who had cobalamin 120–450 pg/ml and folate 1.5-7 ng/ml, homocystein was measured by ELISA method. Lower cobalamin and folate values were accompanied with high Hcy.

Results: In the base of Hcy > 15, cut off points for cobalamin and folate deficiency were <330 pg/ml and <6.5 ng/ml, respectively. Relation between cobalamin and folate was significant (p = 0.000). Hcy was inversely related to cobalamin (p = 0.001) and folate (p = 0.044). Our survey showed that relation between cobalamin and folate and Hcy > 15 μmol/l with neurocognitive and psychologic markers is insignificant, unless with DTR (Deep Tendon reflex) test (p = 0.045). All patients with dementia had hyperhomocysteinemia.

Conclusion: Despite the plausible biochemical results, further diagnostic studies based on clinical, neuropsychological, laboratory features will be necessary to better understand this fascinating biochemical challenge. Then only a serum screening test such as Hcy or Vit. B12 could be done to prevent appearance of neurocognitive and psychologic sign and symptoms.

Keywords: Neurocognitive markers, Cobalamin, Folate, Homocystein, Elderly

doi:10.1016/j.clinbiochem.2011.08.551