Department of Oncology, Clinical Sciences, Lund University.
3.Cheng TS, Lim PY, Fang J, Mohamad MMF, Mohamad HEA, Rahman J (2020). Scientific Reports (Nature Publisher Group), 10(1).
4.Wendt C, Margolin S (2019). Acta Oncologica, 58(2):135-146.

P178: CHEMICAL, ANTIOXIDANT AND ANTIMICROBIAL PROPERTIES OF *Alburnus tarichi* ROE PROTEIN HYDROLYSATE

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Introduction: The protein hydrolysates with antioxidant and antimicrobial potential have become a theme of great interest for pharmaceutical industry. On the other hand, chemical composition of fish protein hydrolysates is significant in nutrition perspective of human health (1). Hence, in the present study proximate and amino acid compositions, antioxidant and antimicrobial activities of *Alburnus tarichi* roe protein hydrolysate was estimated.

Materials and Methods: Roe protein hydrolysate was prepared from defatted *A. tarichi* roe powder using Protease N. For chemical analysis of protein hydrolysate, the level of total protein, total lipid, moisture, ash, and amino acid composition was analysed. For determination of antioxidant activity of hydrolysate, DPPH radical scavenging, hydroxyl-radical scavenging, and reducing power assays were performed. Antimicrobial activity of hydrolysate were analyzed by well diffusion method followed by Schillinger and Luke (2).

Results: Protein, lipid, moisture, and ash content were found to be 87.24±0.1, 0.72±0.04, 8.79±0.3, and 7.01±0.09%, respectively. Glutamic acid, aspartic acid, lysine, leucine and alanine were found to be the most dominant amino acids, whereas, cysteine was found to be the lowest amino acid in roe protein hydrolysate. The IC_{50} value of roe protein hydrolysate for DPPH radical and hydroxyl-radical scavenging activities were 54.33 µg/mL and 77.02 µg/mL, respectively. The reducing power of *A. tarichi* roe protein hydrolysate was analysed, the optical density values of roe protein hydrolysate and gallic acid at 700 nm were 0.45±0.03 and 1.14±0.09, respectively. Roe protein hydrolysate had shown maximum zone of inhibition against *Klebsiella pneumoniae* (11.1±0.30 mm) followed by *Salmonella enterica* (10.7±0.46 mm), *Proteus mirabilis* (10.1±0.35 mm) and *Candida albicans* (8.7±0.34 mm).

Conclusions: The results demonstrated the importance of amino acid composition in determining the bioactive potential of the peptides. The results showed that roe protein hydrolysates of *A. tarichi* was proved to show good effect on antioxidant and antimicrobial activities and can be used a source for nutraceuticals and pharmaceuticals.

References:
1. Fawole OO, et al. (2007). J Food Safety, 9:52-55.
2. Schillinger V, Luke KK. (1989). Appl Environ Microbiol, 55:1091-1096.

P179: PROTECTIVE EFFECTS OF CURCUMIN AND NARINGENIN ON LIVER DAMAGE CAUSED BY COPPER NANOPARTICLES

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Introduction: Copper nanoparticles (CuNP) are ideal products to reduce production costs by replacing more expensive metals compared to itself. The increase in the frequency of use of copper nanoparticles results in an increased exposure of humans to this substance. (1). Curcuma longa L. (Turmeric) is a tropical herb used as a spice and coloring agent. Turmeric consumption reduces the risk of developing cancer types and helps protective biological effects in humans. This effect is thought to be due to the curcumin substance in its structure. (2). Naringenin is one of the dihydroflavanoids and has beneficial effects such as anticancer and antimicrobial found in citrus species and some edible fruits such as tomatoes. (3). In our study, the possible effects of different doses of curcumin and naringenin on the application of copper nanoparticles on rats, oxidative stress and inflammation were investigated in the liver.

Materials and Methods: In this study, 42 rats were divided into 6 groups. One of the groups was the control group, while the other groups were administered different doses of curcumin and naringenin substances as well as CuNP. At the end of the study, after the liver tissue was isolated,

homogenization process was carried out. Superoxide dismutase (SOD), Catalase (CAT) activities, Malondialdehyde (MDA) level and inflammation markers (IL-1α, IL-1B) were investigated in homogenizers.

Results: When the IL-1α parameter in liver tissue was examined, when the control group and different doses of curcumin and naringenin were compared with CuNP, the level of IL-1α decreased, this decrease was not statistically significant (p> 0.05). The IL-1β parameter showed a statistically significant increase in the CuNP group compared to the control group (p <0.05). IL-1β level was decreased in different doses of curcumin and naringenin groups compared to CuNP group (p <0.05).

Conclusions: It can be thought that curcumin and naringenine can be used for the protection and treatment against detrimental effects that may occur in case of exposure to copper nanoparticles in humans.

References:
1. Tang H, Xu M, Luo J, Zhao L, Ye G, Shi F, Li Y (2019). Environmental Sciences Europe, 31(1):1-14.
2. Ravindran PN, Nirmal-Babu K, Sivaraman K (2007). Turmeric: The golden spice of life. Turmeric: The Genus Curcuma. FL, USA:CRC Press, Boca Raton.
3. Salehi B, Fokou PVT, Sharifi-Rad M, Zucca P, Pezzani R, Martins N, Sharifi-Rad J (2019). Pharmaceuticals, 12(1):11.

P180: AN INVESTIGATION ON THE ASSOCIATION BETWEEN ATP DEPENDENT POTASSIUM CHANNELS AND CORONARY ARTERY DISEASE

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Introduction: Coronary artery disease (CAD) is the most common cause of mortality and morbidity worldwide driven by both genetic and environmental factors (1). Atherosclerosis, one of the major causes of coronary artery disease, is a complicated disease that begins to develop in early ages and is caused by cholesterol accumulation in the vein walls (2). Various genetic factors and environmental effects are accelerating the development. There are many reasons for atherosclerosis beginning early in life, resulting in coronary artery disease in middle age and later. Smoking, hypertension, hypercholesterolemia, diabetes, advanced age, familial predisposition are risk factors for atherosclerosis. It is important to determine the genetic background of the disease in order to be able to learn and take precautions against the presence or absence of the predisposition to coronary artery disease in terms of increasing the life span and quality of individuals (3). In the light of the available information, we aimed to investigate whether S422L polymorphism is associated with coronary artery disease in the KCNJ8 gene, which is thought to be ampng risk factors.

Materials and Methods: In our study, individuals who applied to Mersin University Medical Faculty Hospital and Mersin State Hospital Cardiology Department, were diagnosed with coronary artery disease after coronary angiography (n = 100) and who were accepted as healthy after coronary angiography (n = 100) were included. Variation was determined using the Tetra-Primer ARMS PCR method.

Results: No significant relationships were found between the S422L polymorphisms and CAD in our study.

Conclusions: Our results does not support the hypothesis that KCNJ8 gene is associated with a significantly increased CAD risk, and point to S422L polymorphism as a possible hotspot mutation.

References:
1. Bishop ML, Duben-Engelkirk JL, Fody EP (2000). Clinical Chemistry, Principals, Procedures, Correlations. 4th ed. New York, pp 429-430.
2. Gökdemir O, Palaoğlu KE (1993). Aterogenezin hücresel ve moleküler biyolojisi, Kolesterol taşınması ve lipoprotein metabolizması. Istanbul, pp 4-5.
3. Bonetti PO, Lerman LO, Lerman A (2003). *Arteioscler Thromb Vasc Biol*, 23:168-175.