

The Technology of Obtaining Nanomedicines from Deer Antlers Development

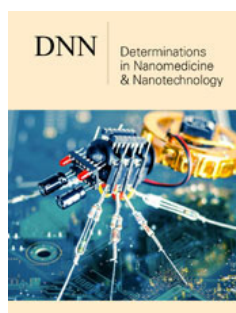
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
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Abbreviations: DAYTAM: Department of Pharmaceutical Technology of the Azerbaijan Medical University

Opinion

One of the urgent issues facing nanotechnology is to create new drug forms by covering the surface of unstable drugs with polymers of natural or synthetic origin, as well as ensuring their long-term effect. Unstable substances include amino acids, enzymes, hormones, vitamins, etc. it can be noted that these are also collected in the maximum amount in deer antlers [1-4]. Since 8 out of 11 climate zones are in Azerbaijan, Altai deer are well adapted to the climatic conditions here. Maralls have a sufficient raw material base in Azerbaijan. Thus, reindeer husbandry has been established in Altyağac, Shamakhi, PirAllahi regions. In addition to countries like Japan, Vietnam, China, Korea, and Russia, Pant baths have been widely used in Azerbaijan since 2015. This eliminates chronic fatigue syndrome and improves the emotional state of a person. It also increases the intensity of metabolism and metabolic processes in the body and accelerates microcirculation in the vessels. In addition, diseases of the urogenital system, gastrointestinal system, bronchial asthma, osteochondrosis and a number of skin diseases are treated [5-7].

In the course of research, it was determined that medicinal preparations and cosmetology products made from deer antlers have a number of shortcomings. This is due to their short useful life, adverse effects in arterial hypertension, atherosclerosis, active form of tuberculosis, severe kidney diseases, diarrhea, brain trauma and epilepsy, and at the same time, their bio absorption by the body is low. It is for the purpose of ensuring more active absorption and effect of medicinal substances that therapeutic systems are developed, which increase absorption by 8-10 times. Such drug delivery systems ensure the delivery of the active substance to the damaged area, i.e. the target cell, preventing damage to healthy cells during treatment [8,9]. The purpose of the study. Taking into account the above, we have prepared extracts from deer antlers with a special technological method and considered it appropriate to create nano capsules by covering their surface with polymers such as carrageenan and gum arabic.

Materials and methods of research. Deer antlers presented from the Altyagac deer farm of Azerbaijan were crushed and extracted. The research work was carried out in the laboratory of the Department of Pharmaceutical Technology of the Azerbaijan Medical University and DAYTAM (East Anatolian Yüksek Teknoloji Uygulama ve Araştırma Merkezi), which operates under Atatürk University in Turkey. Non-ossified deer horns were used for the research. SEM analysis of nano capsules prepared from deer antlers was carried out on a Zeiss Sigma 300 device. TEM analysis of nano capsules was performed on a Hitachi HT7700 device. Nano capsules from deer antlers, distilled water, an ultrasonic water bath, and a carbon-coated grill were used for the research [10].

SEM of nano capsules prepared with carrageenan as a result of the analyzes conducted at DAYTAM was determined to be 118.3-243.6nm in TEM, 10-248nm in TEM, and 33.15-224.1nm in SEM and 15-218nm in TEM of nano capsules prepared with gum arabic. Thus, the nano capsules prepared with gum arabic were proven to be more intense and more stable, which in the future will allow the nano capsules to be transported to the pathological site in the treatment of relevant diseases (oncology, infertility, osteoarthritis, cardiovascular, nervous system), the binding of the drug to the relevant receptors located in the target cells, the rate of release of the drug and will allow a high pharmacotherapeutic effect.

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