

to the population of Ukraine there is a drug from the group of angiotensin-converting enzyme inhibitors (ACEI) enalapril.

Among the dosage forms of enalapril presented on the Ukrainian pharmaceutical market, there are no suppositories with enalapril maleate of domestic production, which gives impetus to the creation of new medicinal products.

Therefore, the development of the composition and introduction into the production of such a drug can increase the effectiveness of hypertension treatment, as well as increase the number of domestic drugs in the pharmaceutical market of Ukraine.

Development of biomaterials for use in construction

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In our time, there is a growing need to find environmentally friendly building materials for the construction industry, as we face challenges such as global warming, the rapid depletion of natural resources and fossil fuels. The solution to this problem is the development of biomaterials.

The term «biological-based material» is defined as a material whose one or more components are grown on the basis of sustainable development and are fully renewable. Such materials offer solutions to the global waste problem and are an essential component for a cleaner, more sustainable future.

The exceptional ability of mushrooms to process organic substances attracts attention in bioeconomy. According to the latest available studies, it has been demonstrated that mycelium biocomposites mixed with other materials obtained from biological processes, such as plant extracts or agricultural waste, are an alternative option for the production of various materials that may be useful in the construction industry, design materials or food industry.

Fungal mycelium is able to decompose lignocellulosic materials and form complex networks with various properties, such as higher mechanical strength, insulation or incombustibility, hydrophobicity. This ability makes it suitable for the manufacture of packaging materials, insulation materials or biotextile products.

To obtain mycelium-based biostructures, an individual fungal strain is inoculated into a substrate of organic substances. Vegetative mycelium degrades and colonizes the organic substrate, using degradation products as nutrients to expand its hyphae from the apex and branch new hyphae and fuse them together to form abundant networks. Over time, the substrate is partially replaced by the biomass of fungi, and the formed mycelium is able to strongly cement the substrate itself, as a result of which a biocomposite material is formed.

In the field of biomaterials, composites consisting of a plastic matrix and high-strength reinforcement offer high performance at low cost and great freedom in developing material for a specific application. A renewable alternative for these matrices is the vegetative state of the fungus, mycelium. Such a matrix is completely biological and can be manufactured at a low cost. Therefore, research on the development of new materials based on mycelium and the study of their properties are relevant.

At the Department of Biotechnology of the National University of Pharmacy, new types of biomaterials based on mushroom mycelium are being developed for use in construction.



A

B

Fig.1. Biomaterial samples:

A - growing samples in molds, B - obtaining biomaterials after baking

The objects of research are sowing crops of fungi *Pleurotus ostreatus*, *Pleurotus citrinopileatus*, *Lentinula edodes*, the substrate for the cultivation of which were sawdust, sunflower husks and wheat bran.

To date, obtaining samples of material (Fig. 1) that can be promising for use in construction as an alternative to thermal insulation materials and sound insulation materials. Research continues to provide the biomaterial with the necessary stability. Further studies are needed to determine the optimal working conditions for the successful cultivation of mycelium-based materials, determine thermal conductivity, insulation properties, fire resistance, etc.

Нутрицевтична активність полісахаридів спарассису курчачого

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Велику групу макромолекул, присутніх у клітинних стінках грибів складають полісахариди. Склад моносахаридних залишків, що включають їх послідовність і розміщення, а також їхні з'єднання та положення глікозидних зв'язків, впливає на активність полісахаридів. Одним із основних грибних полісахаридів є хітин - нерозчинна у воді та неперетравлювана у шлунково-кишковому тракті людини сполука, яка діє як харчові волокна. У свою чергу, більшість полісахаридів, присутніх у грибах, є водорозчинними глюканами з різними типами глікозидних зв'язків, наприклад, (1→3)- α -глюкани та (1→3), (1→6)- β -глюкани. Гриби є доступним і рясним джерелом глюканів із корисним для здоров'я потенціалом. У наш час, коли кількість споживачів, які піклуються про своє здоров'я, зростає, існує потреба в розробці нових стратегій для придбання корисних глюканів.

Відомо, що грибні полісахариди, особливо глюкани, проявляють протипухлинну дію через імуностимулюючий потенціал, який передбачає