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METHODOLOGY OF VITAMIN E SYNTHESIS BASED ON COCOON WORM EXTRACT AND PHYTOL

N.N. Sayitova[1]
N.S. Tangyarikov[2],
Yu.N. Sayitova[3]
Tashkent State Technical University[1], Jizzakh Polytechnic Institute [1,2]

Annotation
Porphyrins are common compounds in nature. Among them, the most common are chlorophyll (a), chlorophyll (b), blood hemoglobin, many studies were devoted to their study in the last century.

Keywords: vitamin E, phytol, extract, chlorophyll, cocoon, catalyst, electrophotographic substance.

Studying the composition of cocoon waste makes it possible to use it as a feed supplement for animals. For this purpose, cocoon worm waste can be used now. Currently available preparations (extracts, tinctures from herbs and plants) have an important place in medicinal products. In the scientific literature, the effect of chlorophyll preparations on the organism of animals and humans is presented in hundreds of works [1].

A review of many scientific works shows that chlorophyll and its products increase the overall tone of the body. Helps correct pathological processes. Helps with wounds and burns. It enhances the growth of young animals. It has antimicrobial effect on staphiological microbes, virucidal effect. Enhances the effect of antibiotics. It inhibits the growth of tumors. It strengthens the body's resistance to carcinogenic substances, has antifungal and anti-tuberculosis effects.

Chlorophyll preparations improve the reproductive ability of farm animals in veterinary medicine. They increase growth and comfort and increase resistance to infections.

Medicines containing chlorophyll are successfully used in the treatment of infectious diseases, in the treatment of tumors - photodynamic therapy [2].

Organization of the production of medicinal and biologically active substances based on chlorophyll and its derivatives is one of the promising directions of using porphyrins. Currently, the following have been identified [3]:

1. It has been proven that several diseases, including anemia, cancer, neuropsychological changes, poisoning with lead and some organic substances, some

skin diseases, radiation poisoning, and other pathological conditions are associated with a violation of the metabolism of porophyrins in the body. Potogenizide plays a leading role in porphyrins and lupus erythematosus.

2. Exogenous porphyrins have the ability to accumulate in rapidly regenerating tissues. Their accumulation in tumor tissue is especially noteworthy. The fluorescent ability of some porphyrin molecules allows them to be used as convenient test objects in biological environments and tissues.

3. The photodynamic effect of porphyrins serves for the use of photochemotherapy in the treatment of them and other diseases.

4. Some natural and synthetic porphyrins have been found to have significant catalytic and enzymatic properties. This indicates that they can be used as activators or sensitizers of certain processes.

5. Porphyrins have the ability to modify radioactively damaged biological objects.

5 ml of nonane is added to a mixture of 0.192 g 98.5% or 0.190 g 100% (50◦104 conc) tetramethylhydroquinone and 0.32 g of aluminum silicate, mixed and heated in a stream of nitrogen until it boils, and for half an hour, the water in the catalyst is expelled under the influence of a Dean-Stark nozzle, and then the mixture is boiled for 0.5 0.38 g of phytol (5.10-4mol) is added during the hour. Phytol is driven as solvent vapors during continuous driving in 5 ml nonane.

After the condensation process is complete, control TSX hexane-ether (2:1), iodine vapors, vitamin E, R1 equal to 0/53, the reaction mass is cooled to 20°C. The catalyst is washed with nonan (3x10ml). The combined filtrates are evaporated in vacuo and purified on a column packed with silica gel with technical vitamin E grade <40/100. Hexane is used as an eluent. After chromatography, 0.5 g of vitamin E is obtained, the purity of which is 98.3% according to the GSX indicator. The theoretical yield of the product is 92.1%.

Found(%): S-80.86; N-11.78; $C_{29}H_{50}O_2$

Calculated (%): C-80.94; H-11.70.

Absorption of vitamin E solution in ethanol in UF spectrum is as follows:

λmax =293 ±1nm, E=72-74; nD20 1,5043; [α] D20+0,16 (C_2H_5OH).

There is no doubt that in addition to the components mentioned above, cocoon excrement contains vitamins and plant growth and a number of other biological substances. This is confirmed by studies based on the experience of feeding cocoon waste as a supplement to the feed of farm animals. For its nutritive value, cocoon excrement, replacing a portion of the usual feed with cocoon excrement has been found to improve daily growth in sheep and cattle. This situation can be explained by the presence of biostimulants that increase the assimilation of nutrients in the cocoon

waste. However, this biostimulant has not been found and identified. In the conclusion of this chapter, it can be noted that cocoon worm waste has been thoroughly and comprehensively studied at the moment, allowing it to be used in various fields [4].

Methods of processing cocoon worm waste to obtain protein compounds, chlorophyll, and, in turn, pheophorbid and phytol, acids and other biologically active substances from it, allow more effective use of cocoon worm waste. So processing raw materials does not change its structure. On the contrary, it allows to obtain additional valuable products [5].

Thus, silkworm excrement is a source of various biologically active substances and performs very important functions in living nature, and they are widely used in medicine and technology. The cheapness of raw materials, from which chlorophyll makes it economically efficient to obtain other products based on it.

Porphyrins and their metallocomplexes are widely used. Metolloporphyrins exhibit high catalytic and electrolytic activity, are photosensitizers and semiconductors in various oxidation and reduction processes, and are used in the production of photo-semiconductors, O2 and small molecules, radio projectors, photo-semiconductor analytical reagents and dyes. This class of substances shows great promise for electrophotographic agents, aptiseptics, pigments, food dyes, and diagnostic purposes in therapy.

The use of natural prophyrins and their derivatives is related to medicine. This is because they are less toxic to living tissues and the biological environment. Chlorophyll has strong antioxidant properties. For this reason, it has the property of keeping cells in the center of inflammation due to the effects of the numbers that are formed in the body.

A significant part of the investigation is based on the use of porphyrins in oncology. The ability of hematoporphyrin and tetrasulfatetetraphenylporphyrins to accumulate in tissues and fluorescede is used to diagnose tumors. Metal complexes of hematoporphyrin and protorphyrins have been studied as therapeutic drugs that stop the growth of cancer cells in the treatment of cancer of the lung, stomach, colon and other organs.

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