

Metabolism of *Thermopsis lanceolata* alkaloids and an opportunity of its correction
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Alkaloids are vegetative establishments of complex and original structure with nitrous heterocycles in the basis. For a long time they drew researchers' attention because of their unique and specific physiological effect on alive organisms. Not all the representatives of the globe's flora contain these unique substances. Alkaloid cytosine is to be found mainly in the plants of the fabaceous family - Fabaceae. For the Cytisine production the seeds of *Thermopsis lanceolata* R.Br (*T.lanceolata* R.Br) and *Cytisus laburnum* (*C.laburnum*) are used as a raw material.

Respiration initiation is characteristic for cytosine. Simultaneous initiation of sympathetic nodes and paranephroses result in the arterial pressure rise. However, the complexity of the yielded alkaloid excretion and the purification from *T. lanceolata*-seeds and high cost of the drug make it expedient to produce cytosine by biotechnological methods.

The purpose of the review is to study the primary and secondary metabolites biosynthesis laws in the *T. lanceolata* cell culture on agarlike media and in suspension culture.

In the basis of the biosynthesis of the quinolizine row alkaloids there is a formation of corresponding heterocycles. Lysine turns into amine cadaverine which is a direct precursor of cytosine, anabasine, lupinin, sparteine, and other alkaloids.

L- lysine (α , ϵ -aminocaproic acid) is known to be irreplaceable and a very important amino acid. It is not synthesized in the cells of animals. Two ways of its formation in living organisms are known: aminoadipinic and diaminopimelic ones.

The use of the method of cell culture on agarlike or liquid nutrient media is rather perspective as an alternative way of alkaloid reception. The reception of *T. lanceolata* cell culture, accumulating BAM, is represented complex, but quite a solvable problem. Resorting to the SPCC methods, and also optimizing cultivation conditions, it is possible to get the primary metabolites (aspartate, lysine) strains-producers at the first stage of the experiment. At the second stage of the cultivation it is necessary to research the chemical and physical factors influence on the biosynthesis and the accumulation of the secondary metabolites (cytosine). It is recommended to optimize the organic additions (corn extract, yeast extract, casein hydrolysate) and to stabilize physical factors (t 25 °C, pH 5,6-5,8, darkness).

To control the stages of alkaloid biosynthesis in the *T. lanceolata* cell culture it is expedient to apply a histochemical method to reveal the intermediate products of the synthesis.

Qualitative histological colouring will allow to determine the level of the callus tissue specialization and to reveal the law of chemical and physical factors influence.