



To Examine the Processes of Biochemical Action Of 6-Benzylaminopurine with Cobalt-II Nitrate Dihydrate on the “Morus Alba” Variety of Moraceae Plant

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ABSTRACT

The effects of the reaction of coordination compounds of cobalt II nitrate with 6-benzylaminopurine on the “morus alba” variety of moraceae plant were studied. 6-Benzylaminopurine is a broad-spectrum plant growth regulator, capable of rejuvenating plants, bringing plants out of dormancy, causing the formation of lateral shoots and root shoots.

Keywords:

The effect, reaction of coordination, cobalt II-nitrat, “morus alba”, 6-benzylaminopurin, moraceae plant, plant growth regulator, capable, formation of lateral shoots, root shoots, lost weight, appetite, became sluggish, anemic and eventually died.

There are certain concentration ranges in which trace elements, including metals and, in particular, cobalt, are necessary for living organisms [1-4]. An excess of these elements is harmful to the body, whereas the presence of metals that do not have a biological function is always harmful [14].

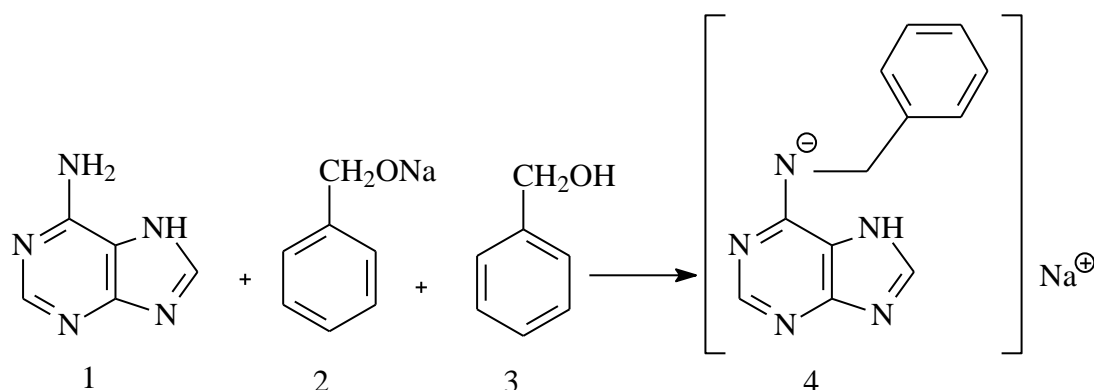
Serious interest in the biochemistry of cobalt arose around 1934 in connection with severe diseases of cattle and sheep in various parts of the world (Russia, Scotland, Australia, New Zealand, Canada). The animals lost weight, appetite, became sluggish, anemic and eventually died. The presence of anemia suggested the involvement of iron deficiency. But it turned out that it was not the iron itself, but the presence of very small amounts of cobalt in iron compounds. The addition of cobalt to the feed completely removed all toxic symptoms [14, 15].

Cobalt as a trace element is necessary for all living organisms. There are many works concerning the role of cobalt in plant physiology: plants accumulate cobalt (mainly in the roots), its content increases during growth and decreases during flowering. Small cobalt additives lead to a significant increase in yield and improvement of its quality (cereals, potatoes, legumes). Foods with a high cobalt content include: beets (especially tops), bread, buckwheat, cabbage, figs, green onions, mushrooms, pears, radishes, tomatoes. They contain about 0,2 mg/kg of cobalt. Apples, apricots, bananas, carrots, cherries, coffee, corn, eggplant, oats, peppers, potatoes, rice, cereals [1-10].

Data on the content of cobalt in the blood and various organs of animals and humans are given in many works. Here are just a few of them. In human blood, the cobalt content

averages 0,238 mg /kg, while in erythrocytes it varies from 0,059 to 0,13, and in serum - from 0,0055 to 0,40 mg/ kg. In animal organs, the highest concentration of cobalt falls on the liver (0,076 - 0,201 mg/kg), followed by the kidneys, pancreas, spleen. Cobalt is excreted from the body of animals and humans mainly by the kidneys. [11-15].

Method Of Obtaining 6-Benzylaminopurine.



3 gr of adenine (1), (0,023 mol), 2,9 gr of sodium benzylate (2), (0,023 mol) and 20 ml of benzyl alcohol (3), (0,194 mol) were added to the flask (the molar ratio of adenine, sodium benzylate, benzyl alcohol is 1:1; 8,7) and boiled for 2,5 hours with stirring. Cooled to room temperature, 150 ml of diethyl ether was added and the precipitate was filtered. 5,2 gr of sodium salt of 6-benzylaminopurine (4) was obtained, the yield was 94%.

5,2 gr of sodium salt of 6-benzylaminopurine (4) was dissolved in 150-200 ml of hot water, 1,3-1,5 ml of acetic acid was added to pH 6,5-7,5, cooled to room temperature and filtered, dried.

The effects of the reaction of coordination compounds of cobalt II nitrate with 6-benzylaminopurine on the "morus alba" variety of moraceae plant were studied.

The expected results in our experiment consists of the following stages.

Coordination compounds of cobalt (II)-nitrate with 6-benzylaminopurine we prepared an alcohol solution of 2,5% and 5% solutions were prepared on distilled water. 20 seeds in 2,5% solution for 5 and 10 hours, 20 seeds in 5% solution for 5 and 10 hours in solution were poured.

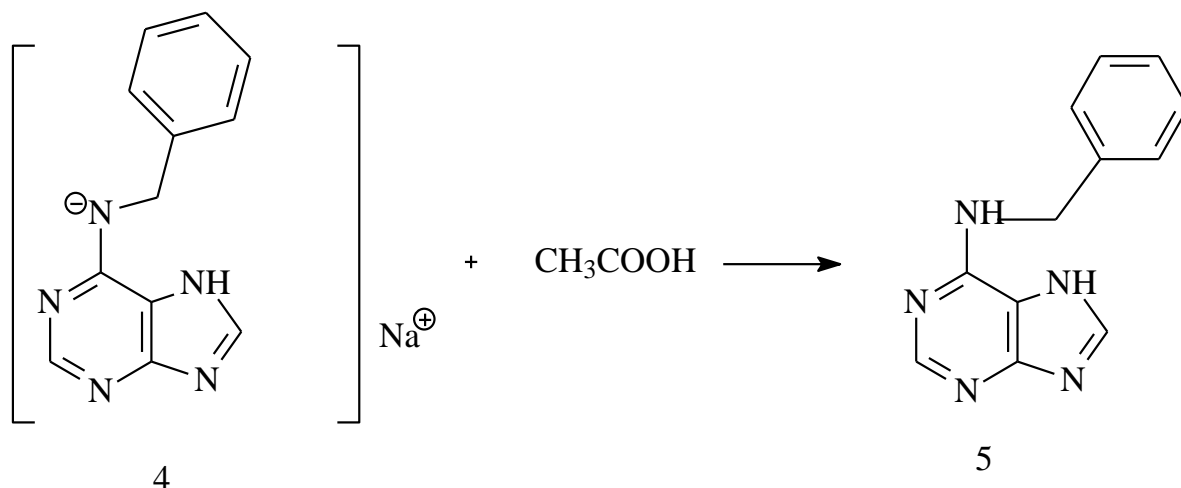
Effect coordination compounds of cobalt II nitrate with 6-benzylaminopurine on seed germination. Seeds of four petri dishes and one 20 pcs at equal distances. In total, the sample was placed in a thermostat in 5 Petri dishes.

The temperature is

27 °C, humidity is 40%. 2,5 and 5 hours, the seeds are soaked in a 5% solution for 10 hours. the processes of increase were observed, 5% in 5 hours the seeds were soaked in solution for

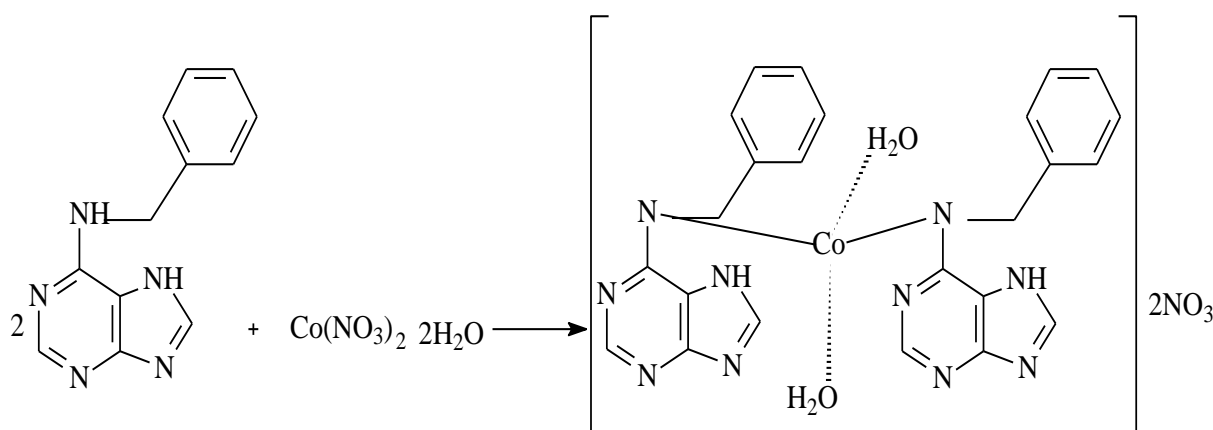
10 hours, the processes of enlargement were observed. The root growth rate is performed in the same order. For 5 hours in 2,5% solution as the roots grow. It is desirable to sow seeds evenly. We're counting on it.

In conclusion, Cobalt is necessary for plants to absorb molecular nitrogen, it is a trace element, the nodes of legumes and the formation of nodular bacteria on the leaves will give. Cobalt accumulates in the wood of the plant and accelerates growth, participates in the metabolism of oxin, that is, an important nutrient for plant growth processes, including cell membranes, helps to lengthen. This metal ion is involved in the proliferation of leaf cells. An increase in the thickness and volume of mesophilic, columnar and volume of cells in the turbid-leaf parenchyma and dormice. In addition, cobalt is a common water for plants. increases the maintenance and, consequently, the drought of crops increases the longevity. The concentration of chloroplasts and pigments in the leaves, the formation of the photosynthetic apparatus of plants and the effect of the coordination of cobalt compounds is very important.



0,2 moles of 6-benzylaminopurine 0,1 mole of cobalt (II)-nitrate crystallohydrate is mixed in a porcelain mortar. Grind in a mortar and mix for

three hours. During mixing, every 10-15 minutes, the surface around the porcelain mortar and mixer is cleaned by scraping.



1. As a result of the experiment, 5% and 10% solutions of the II product were prepared in distilled water.
2. The root of the one-year plant variety "Morus alba" of 4 Moraceae plants was dipped in a 5% solution for 5 hours.
3. The root of the one-year plant variety "Morus alba" of 4 Moraceae plants was dipped in 10% li solution for 5 hours, and the root of the one-year plant variety "Morus alba" of another Moraceae plant was dipped in ordinary water for 5 hours.

It can be concluded that if the roots are dipped for 5 hours in a 10% solution compared to a 5% solution with an increase in the rate of growth of the root, it is desirable to count.

Conclusion

So, this complex organic compound plays an important role in the processes of hemopoiesis. Cobalt in plants is a microelement necessary

for the assimilation of molecular nitrogen, promotes the formation of nodular bacteria in the root system of leguminous crops

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