



Increased Production of Anti-Cancer Drug Taxol and the Change in the Pattern of Protein Banding of Hazelnut Cells (*Coryus Avellana*) under the Effect of Yeast Extract

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Taxol, a complex anti-cancer compound, is commonly produced in yew plant and recently in hazelnut and its cell culture [1]. Today, one of the renewable and environmental friendly sources for the production of taxol and its analogues is cell culture [2]. In this research, yeast extract (1% w/v) was treated on hazelnut cells and after 12, 24, 48, 72 h the cells were harvested. The parameters measured were growth, phenolic compounds, antioxidant capacity, Phenylalanine ammonia lyase enzyme activity, taxol production, and protein banding pattern. The experiment was conducted as a factorial in a completely randomized design with 3 replications. Untreated cultures were considered as control. The results showed that the growth of the cells was significantly higher in treatment with at 72 h compared to other cultures. It was also observed that with time, the production of taxol, phenolic compounds, antioxidant capacity, and Phenylalanine ammonia lyase enzyme activity increased significantly compared to control cultures. Maximum amount of taxol (12.35 µg/L) was obtained in treated at 72 h after treatment with, which was approximately 2 times higher than that of the control culture at the beginning of the experiment. The protein banding pattern showed an increase in light proteins with an increase in the duration of the experiment compared to the control sample.

Keywords: Yeast extract, Protein banding pattern, Taxol, Hazelnut, Cell culture

References

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