“Molecular regulation of anthocyanin in static and submerged cultures of *Daucus carota*”

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Abstract:

Anthocyanins occur in relatively high concentrations in the human diet and have an nutraceutical interest. These pigments have also been used industrially as natural colorants for food and beverages since the use of synthetic dyes has been reduced due to adverse effects to human health. They are mainly extracted from the residual grape skins and seeds obtained as by-products of wine production, but seasonal variations make the reproducibility and uniformity of the color difficult to maintain. Plant cell and tissue culture strategies are an attractive alternative to the use of whole plants for the production of high-value secondary metabolites and has been the subject of extended research in the last decades. One of the most important features of tissue culture is the continuous production of anthocyanin and other secondary metabolites in a short period, therefore, can be employed for commercialization. This study enlightened the influence and the importance of macro-elements on the accumulation of anthocyanin by manipulating MS medium constituents. By controlling both the physical and the chemical microenvironment of the plant cell cultures, anthocyanin production could be achieved to higher level.


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