

DNA Methylation Changes Caused by Lawsone

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Abstract : Lawsone is a pigment that occurs naturally in plants. It has been used as a skin and hair dye for a long time. Moreover, its different biological activities have been reported. The present study focused on the effect of lawsone on a plant cell model represented by tobacco BY-2 cell suspension culture, which is used as a model comparable with the HeLa cells. It has been shown that lawsone inhibits the cell growth in the concentration-dependent manner. In addition, changes in DNA methylation level have been determined. We observed decreasing level of DNA methylation in the presence of increasing concentrations of lawsone. These results were accompanied with overproduction of reactive oxygen species (ROS). Since epigenetic modifications can be caused by different stress factors, there could be a connection between the changes in the level of DNA methylation and ROS production caused by lawsone.

Keywords : DNA methylation, lawsone, naphthoquinone, reactive oxygen species

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