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Analysis of the Expression of Three Genes Involved in the Biosynthesis of Anthocyanin Using RT-qPCR in *Rubus Niveus*

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Biotechnological applications such as (RT-qPCR) Quantitative Polymerase Chain Reaction, are laboratory techniques that have revolutionized the world of Molecular Biology, providing results in less time and a high degree of reliability, allowing the understanding of genes, functioning and expression, as in the case of the genes of the anthocyanins, which in recent times have increased their interest due to its antioxidant activity which generates therapeutic effects such as reduction of coronary heart disease, improvement of visual acuity, anti-cancer, anti-aging and antitumor effects.

The Polymerase Chain Reaction with reverse transcription (RT-qPCR) allowed to analyze the level of expression of β -Actin, RuANS and RuMYB10, genes involved in the biosynthesis of anthocyanin in *Rubus niveus*, collected in three different zones of Rumiñahui-Ecuador. According to values obtained with statistical analyses such as Shapiro Wilks, Anova and Tukey test, it was noted that significant differences in the expression of three genes didn't exist and there were generated the following results: gene β -Actin, which has greater concentration (174, 65ngmL), followed by the RuANS gene (167, 43ngmL) and finally the RuMYB10 gene (163, 55ngmL), reaching the conclusion that the studied species presents a level of similar expression among the three analyzed genes.

This research can be considered as a starting point of projects for improving the genus *Rubus* (blackberry), in order to increase their nutritional value moreover grow them as a source for the production of nutraceuticals, drugs and therefore developing productivity and economic value that this crop represents for the country.