Evaluating the Effectiveness of Anthocyanin Treatment on the Reduction of CD4 Activity Associated with Cell Membrane Transformation of Viral DNA

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During the course of the past two years, the effects of antioxidants on cell viability and bacterial growth have been tested. The addition of anthocyanins to cancer cell cultures significantly decreased the growth of these cells. While these outcomes were both useful, the missing factor was the biochemical link between the two. This relationship was not identified through the previously completed research. It was recently hypothesized that the anthocyanin treatment was effective in previous research because the same CD4 protein was being blocked by the addition of antioxidants. With this pathway blocked, the body would be able to attack the virus before it had access to the immune system. In-Vitro CD4 cultures were treated with varying antioxidant dilutions and processed using ICC techniques to visualize CD4 activity in the cell membrane. While under the microscope, the cells were counted using computer software to perform a density slice analysis. When analyzing the 2X dilution results, it is clear that the CD4 protein was inhibited. The particle expression was around 54.9 which compared to the control count of 90.2 shows that there was a decrease. The standard deviation was 51. T tests were run on these numbers to validate the results. The t value was .9-.95 which means there is only a 5-10 % chance of randomness in the series. When analyzing the 4X dilution, more conclusive results were seen. The overall particle expression was 46.7, with a standard deviation of 18. The t test showed a final value between .95 and .975. The research showed that the CD4 protein was being directly targeted by anthocyanin's from the black raspberry extract. Reduced CD4 activity may be a means of effectively controlling viral transmission and cellular activity that use this pathway.

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