Evaluating Inhibitory Actions on the NF-KB Pathway Associated with Reduced CD4 Protein Availability Generated by the Application of Delphinidin

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For the past three years, the effectiveness of antioxidants on cell viability and bacterial growth has been tested. It was determined that the addition of antioxidants from black raspberries to cell cultures associated with tumorogenesis decreased the growth of these cells. Antioxidants have also proven effective in inhibiting the growth of bacterial cultures. Last year, these findings led to an investigation of the biochemical factor linking the previous two years of results. Utilizing the CD4 protein pathway, it was verified that some factor within the antioxidant treatment was responsible for inhibiting membrane expression of CD4, but the exact nature of the compound remained unidentified. Recent research provides reason to believe that a delphinidin compound found in black raspberries may be associated with the results found in previous research. It was hypothesized that the delphinidin compound found in the antioxidant extract would directly interact with both these pathways. Experimentation was performed and it was concluded the TNF-alpha pathway is active in normal GK 1.5 cells. When antioxidants and delphinidin are added to the cells it will be expected that TNF-alpha pathway activities are reduced. Previous research has provided evidence that the TNF-alpha pathway is inhibited by the delphinidin compound. Therefore, reduced pathway activity would be expected in cells treated with delphinidin solutions. Reduced CD4 activity was also noted in cells treated with the black raspberry compound. The pathway connections between this compound and TNF-alpha would indicate that black raspberry likely will impact this pathway as well. Research has provided evidence to believe that there is delphinidin present in the black raspberry extract and is therefore effective.

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