

Comparative Effects of Various Flavonoids on Biofilm Formation of *S. marcescens*

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The purpose of this experiment is to determine the effects of four different flavonoids, Apigenin, Curcumin, Daidzein, and Quercetin, on the biofilm formation of *S. marcescens*. It was hypothesized that all four flavonoids would cause a decrease in biofilm formation. *S. marcescens* was incubated in nutrient broth with each flavonoid dissolved in it for 48 hours. After incubation, a Crystal Violet biofilm assay was performed to quantify biofilm present in each culture. This data was then compared to a control group to find the effects of each flavonoid on biofilm formation. It was found that Quercetin consistently reduced the amount of biofilm present after incubation, $p < .02$. Apigenin, Curcumin, and Daidzein each reduced biofilm formation in some but not all trials. The data supports the hypothesis that these four flavonoids are able to reduce biofilm formation.