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

Norden, Ryan (School: East Noble High School)

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.

Awards Won: