The Effects of Sucralose on *Escherichia coli* and *Klebsiella aerogenes*

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Abstract

Growing concerns over high-sugar content foods in our diet has led many individuals to adopt synthetic sweeteners as suitable alternatives to sugar in their diet. One of the most popular synthetic sweeteners used in the market today is Splenda, a sucralose-based artificial sweetener. This study is aimed to determine if the synthetic sweetener sucralose can induce virulence on the gastrointestinal bacteria *Escherichia coli* and *Klebsiella aerogenes* by increasing their biofilm formation. This study further test the effects sucralose has on the antibiotic resistance of our gut bacteria. The results from this study showed that sucralose has an effect on both biofilm formation and antibiotic resistance of *E.coli* but only affects the antibiotic resistance of *K. aerogenes.* This study further revealed that there is no conclusive correlation between the formation of biofilm and antibiotic resistance of the bacteria. Our gastrointestinal flora plays a vital role in our health and it is crucial that we stay conscious of our diets and the consequences it may have on our gut microbiome.

Keywords: Sucralose, Escherichia coli, Klebsiella aerogenes, Antibiotic Resistance, Biofilm