Correlating Sugar Consumption with Hormone Production Using Shmoo Formation in S. Cerevisiae

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Polycystic Ovary Syndrome (PCOS) and insulin resistance have been known for years to be correlated statistically. However, no one has been able to confirm which one causes the other. In an attempt to create evidence that insulin resistance can lead to PCOS, an experiment was conducted using Saccharomyces cerevisiae as a model organism. Because the defining characteristic of PCOS is hormonal abnormalities, this experiment was performed to test how high sugar diets, which lead to insulin resistance, affect hormone production in S. cerevisiae. Cultures of the yeast were raised in solutions with different sugar concentrations, and the hormone production was analyzed by observing the formation of shmoos, the microscopically visible gamete cells that S. cerevisiae forms. This will allow an inference to be made about how sugar affects hormone production in S. cerevisiae, and lead to a possible conclusion about whether sugar induced insulin resistance could affect hormone production, and therefore PCOS, in humans. Results revealed that there is a positive correlation between sugar consumption and shmoo formation in S. cerevisiae, which indicates that sugar induces an increased production of reproductive hormones, and provides significant evidence that insulin resistance is a causative factor in Polycystic Ovary Syndrome.

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