

## Genetic suppressor of *che-3* serotonin response defects

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*che-3* is a cytosolic dynein heavy chain within *Caenorhabditis elegans*. This motor protein acts in intraflagellar transport and maintains structural integrity of sensory cilia structures. When mutated at the *che-3* genetic locus, the mutants show progressive developmental defects of the chemosensory cilia. The *che-3* mutants lose olfactory abilities and are unable to detect and respond to factors in their environment. Therefore, *che-3* cannot respond to serotonin stimulation properly. Normally, wild type (N2) *C. elegans* produce more eggs in the presence of serotonin. Our goal was to test the relationship between serotonin and the olfactory senses within *C. elegans*. It is not known why *che-3* is less responsive to serotonin. To address this, we mutagenized *che-3* and found a suppressor that recovers the mutant's response to serotonin. We created various trials to test a *che-3* mutant suppressor that produces more eggs in the presence of serotonin than the wild type. The mutagenized *che-3* were bred to yield the recessive F2 generation and placed in serotonin solutions to observe the number of eggs produced. The experiment was repeated many times to yield a consistent outcome. The results that were observed in *che-3* mutants, compared to the wild type, produced more eggs in the presence of serotonin when the suppressing mutation occurred. In the future, further testing of *che-3* mutants could aid in our understanding of the human response to serotonin and the effects of serotonin uptake within human chemosensory structures in the brain.