# Pyrocystis fusiformis vs. the Circadian Rhythm: How Does Light Exposure Affect the Bioluminescence of Pyrocystis fusiformis?

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This experiment was performed to see if the bioluminescence of Pyrocystis fusiformis would diminish over time after being exposed to a circadian rhythm that does not include both light and darkness. The groups were a control, reverse Light/Dark, Light, and Dark. Each group contained three test tubes full of the dinoflagellate cultures. The reverse Light/Dark group was adapted to a circadian rhythm that included a period of light that lasted twelve hours and a period of darkness that lasted twelve hours each day. The Light group was kept in constant light. The Dark group was kept in constant darkness. After every twelve-hour cycle, the bioluminescence of each group was analyzed. The results were that the reverse Light/Dark group adapted to its light cycle and produced increasing bioluminescence over time. The Light group did not adapt to constant light and the amount of bioluminescence it produced decreased over time. The Dark group did not adapt to constant darkness and had decreasing bioluminescence over time. The results demonstrate that without a circadian rhythm including both light and darkness, the bioluminescence of Pyrocystis fusiformis will decrease over time.

**Awards Won:**