

EFFECTS OF CALCIUM CHLORIDE ON PLANARIAN REGENERATION

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INTRODUCTION

ABSTRACT

Our experiment involved testing the rate of regeneration of planarians in different calcium chloride concentrations.

BACKGROUND

Planarians are freshwater creatures that are bilaterally symmetrical and contain complex tissues and organ systems. With the presence of stem cells inside the planarians, the planarians can asexually reproduce and regenerate within 14 days. However, the idea behind the post-amputation of a B-CAT Planarian, a planarian with heads on both ends, is to be experimented.

HYPOTHESIS

If the concentration of Calcium Chloride increases, then the rate of regeneration of the planarian will increase.

RESEARCH

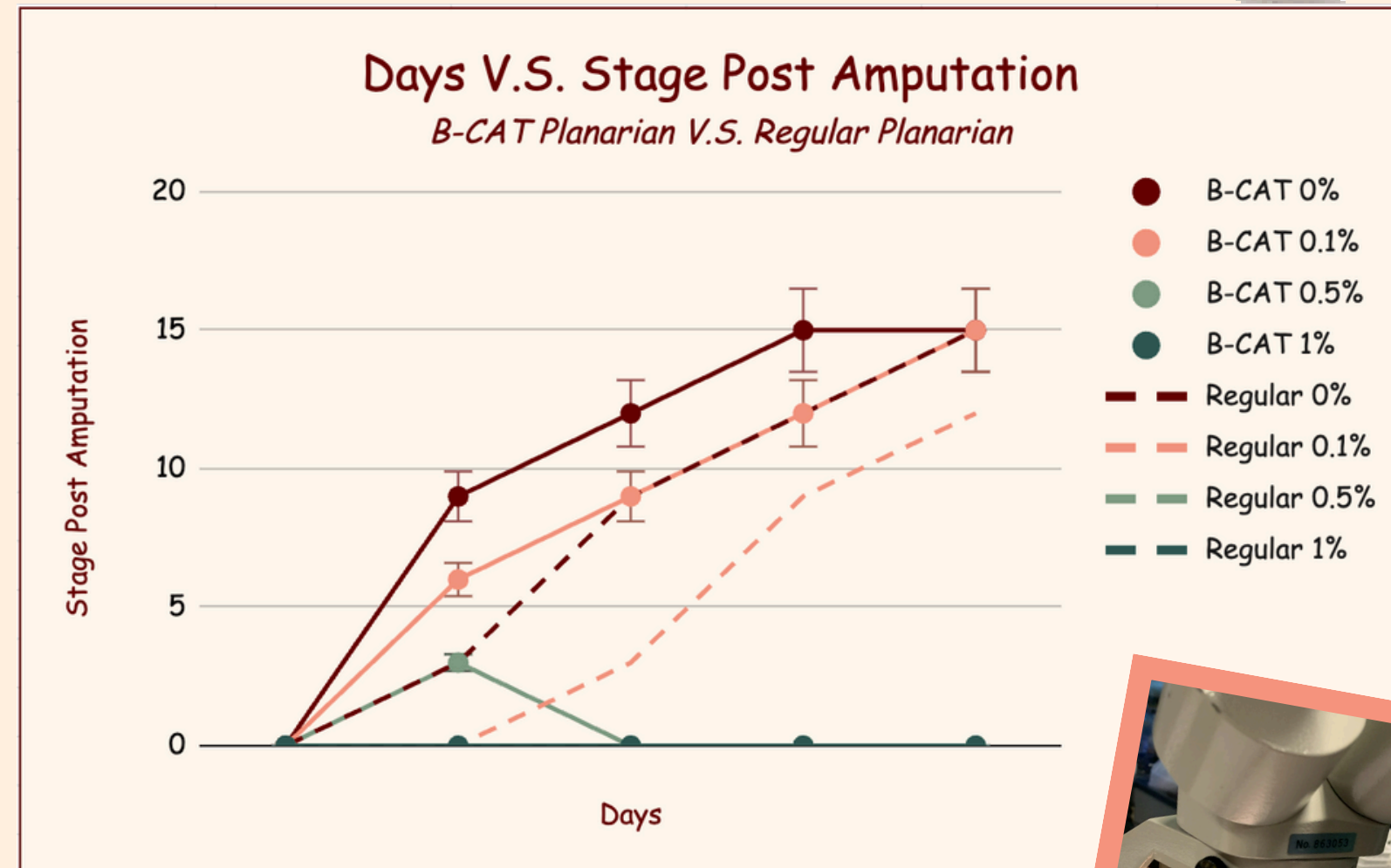
MATERIAL

- Planarians (B-CAT RNA & Regular Planarians)
- Calcium chloride (0%, 0.1%, 0.5%, 1% CaCl)
- Microscope
- 100ml beaker
- Petri Dishes (8)
- Distilled water

METHODOLOGY

1. Prepare 4 stock solutions containing different Calcium Chloride concentrations (0%, 0.1%, 0.5%, and 1%)
2. Place 1 regular Planarian in each of the 4 petri dishes. Place 1 B-CAT Planarian in each of the remaining 4 petri dishes.
3. Amputate the Planarians horizontally into 2 pieces.
4. Pour each type of solution into 1 petri dish with regular Planarian and 1 petri dish with B-CAT Planarian.
5. Monitor and record growth of planarians. Refill with stock solution as needed.

DATA



RESULTS

According to our data, we fail to accept our hypothesis. Instead of regeneration being more successful and faster with a higher concentration of Calcium Chloride, it actually decreased. As seen on the graph, the Regular Planarian 0% CaCl₂ concentration reached a higher stage of regeneration than the Regular 0.5% or 1% CaCl₂ concentration solutions. Additionally, the error bars don't overlap which means that our data is fairly credible.

CONCLUSION

ANALYSIS

Our experiment involved testing the rate of regeneration of planarians in different calcium chloride concentrations. The results contradicted our hypothesis. The rate of regeneration decreased as the calcium chloride concentrations increased. Therefore, calcium chloride seemed to inhibit the rate of regeneration in planarians. It's also worth considering that there may be several factors that contributed to errors in our experiment. For example, incorrect calcium chloride measurements and incorrect amputation, as some of the planarians died after being amputated.

