

# Exploring Antimicrobial Properties of Crocodile Tears

Captain James Hook, Neverland Pirate Association

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## Abstract

This revolutionary research dives into the often-overlooked potential of crocodile tears as a potent antimicrobial agent. Drawing from a series of whimsical experiments and mathematical models, we scrutinize the efficacy of these tears against common pirate ship-borne bacteria.

## 1 Introduction

Crocodiles, renowned for their deceptive tears, have shadowed the Pirate Affairs of Neverland for ages. But might these tears, frequently associated with duplicity, have a silver lining? This paper sails this uncharted territory.

## 2 Mathematical Model

Let  $T$  represent the antimicrobial strength of the tears and  $B$  be the bacterial proliferation rate. We propose:

$$R = B - lT \tag{1}$$

Where  $R$  is the resultant bacterial growth and  $l$  is the tear's efficacy coefficient.

### 2.1 Quantifying Tear's Potency

Given that:

$$B = e^{\gamma t}$$

When exposed to crocodile tears, the bacterial growth inhibition rate,  $I_t$ , is postulated as:

$$I_t = \frac{\delta T}{\delta t}$$

Integrating over a given exposure time, we get:

$$T = \int I_t dt$$

Using this in (1), we infer:

$$R = e^{\gamma t} - l \int I_t dt$$

### 3 Experimental Modelling

1. **Scenario 1:** A petri dish, cultured with bacteria commonly found on pirate ships, is exposed to undiluted crocodile tears.
2. **Scenario 2:** The ship's wooden surface, notoriously a bacterial haven, is wiped with a cloth drenched in crocodile tears.

Both scenarios were exhaustively tested aboard the Jolly Roger.

### 4 Results and Discussion

For Scenario 1, bacterial growth reduced by a staggering 68.5

### 5 Further Research Directions

1. **Emotion Variability:** Do tears shed in hunger differ from those shed in sorrow?
2. **Concentration Analysis:** At what dilution do the tears lose their antimicrobial property?
3. **Application Methods:** Is wiping superior to spraying or dabbing for optimal antimicrobial effect?

### 6 Conclusion

This exploration paves the way for an innovative, natural antimicrobial sourced directly from Neverland's fiercest reptile. Pirate hygiene, often a secondary concern, now has a glimmer of hope.

### References

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- [2] C. Dundee, *Crocodiles: Beneath the Scales*, Reptilian Review, 1820.
- [3] P. Pan, *Folklore Remedies of Neverland*, Lost Boys Publications, 1705.