

Discovering Phage

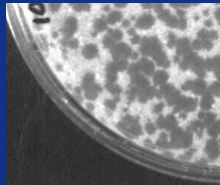
Amanda Ball

Introduction

- A phage is a virus that infect bacteria
- Phage can be either Lytic or Lysogenic
 - If a phage is Lytic it kills its host bacteria
 - If a phage is Lysogenic then it stays dormant within the host bacteria.
- It is estimated that there are 10^{31} phage particles on earth
- Phages can be found in soil.

Introduction, Continued

- The image below is a picture of a corner of a plate that contains phage. The holes in the plate are plaques.
- If a sample contains phage These plaques will form.



Hypothesis

- I believe that new phage can be discovered around and in Prospect Park.

Methods

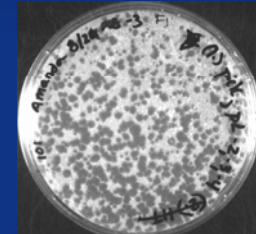
- 9 soil samples were collected in and around Prospect Park.
- The 9 soil samples were mixed with MP Buffer.
- They were then plated on 7H9 with M. Smegmatis
- After a couple of days the plates were observed to see if plaques formed.
- The plates containing plaques were then further analyzed

Evidence

These are plates where the phages have infected the bacteria Smegmatis.



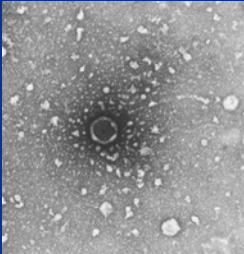
Phage 100, Pinky



Phage 101, The Brain

Results page 1

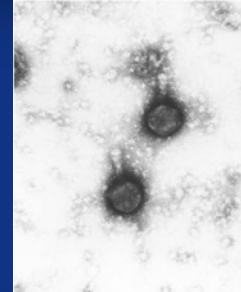
- Out of the 9 soil samples tested, 2 soil samples contained phages.



The photo on the left is a image Of one of the phages I discovered, This is phage 100, or it is also known as Pinky. It is a long tailed phage.

Results Continued

- The photo on the right is Phage 101, or also known as The Brain. It is a Short tailed Phage.



Conclusion

- Out of the 9 soil samples 2 contained Phage
- These findings show that phage can be found in and around the area of Prospect Park.
- Also, I found that the two samples with phage were both ones that had had a lot of contact with animals and people.
- Where the other samples were taken from areas that were more isolated.

Future Studies

- Collect soil samples from the same area. Soil samples from areas that have had lots of contact with outside things. Soil samples from areas that have had hardly any contact.
- Soil samples from the original locations can be collected to see if there are any changes.
- Another Experiment would be to plate the two phages found with BCG, to see if plaques form on a different bacteria.
- Test whether phage 101 is a transductive phage.