

Activity – How were Viruses discovered?

Subject	Biology
Class	XI
Chapter	Biological Classification
Topic	Discovery of Viruses
Duration	45 min
Nature of the Activity	In pairs

What will I learn? (Learning Outcome)- The students will be able to find out how viruses must have been discovered; learn the steps of scientific method

Skills- Observing, Critical thinking, Inferring

What we have to do?- Use of Analogy to Study how Viruses were Discovered

What do we require?

- potato
- tea leaves
- water
- 2 beakers
- funnel and filter paper /sieve
- stirrer
- Iodine solution (alternatively- tincture iodine)

What do we need to know?

What is filtration?

Test for starch

What is analogy?

- **Teacher's activity-** Teacher will prepare potato extract having thin consistency and make small proportions to distribute among all the students. Then give the instructions along with the protocol (Student's activity) and a table for reference:

Materials/ Experiment	Analogous to-
Tea leaves	Bacteria
Starch (in potato extract)	Viruses

Sieve/ filter paper and funnel	Bacteria filter
Potato extract	Extract of infected leaves of tobacco plant
Iodine test done before the beginning of the experiment	Infected Tobacco plant
Iodine test done after the filtration	Virulence

How will we proceed?

➤ Student's activity

1. Each student to perform test for starch using 5drops of extract and 2drops of iodine solution (Test I)
2. Students observe and note in observation table
3. To take a beaker and mix ½ tsp of tea leaves in 20ml of extract given
4. Stir it for a minute
5. Pour the mixture and let it pass through the sieve/ filter paper & funnel, to be collected (as filtrate) in another beaker (kept below it)
6. Perform test for starch again, using the filtrate (Test II)

What do we observe?

Test for Starch	Observation (Colour)	Positive/ Negative
Test I	---	---
Test II	---	---

What have we learnt?

- The filtrate (filtered potato extract) also gives positive test
- Viruses are smaller than bacteria
- Virulence of viruses is retained even after passing through the filters ;
- When the infectious fluid was applied on leaves of healthy tobacco plant, it caught the disease.

What would I like to know ?

What is the size of viruses? What is the range?

Let me Evaluate myself-

1. How can viruses be crystallised?
2. While working with extremely virulent strains of viruses, what kind of laminar flow is used?
3. Compare virions, viroids and prions.
4. Why is it difficult to make vaccines against viruses?
5. Why have the small pox viruses been stored in two foreign labs, inspite of the fact that the disease is eradicated?