

Short Notes:

1. Introduction to Cultivation of Virus in Embryonated Egg: Embryonated eggs, especially chicken eggs, have been widely used for cultivating viruses. This method involves inoculating the virus into various parts of the egg, such as the yolk sac, allantoic sac, or amniotic sac. The embryo's cellular structures support viral replication, and this technique is still commonly used for vaccine production, such as in the case of influenza.

2. Methods of Inoculation: The virus can be inoculated into different parts of the embryonated egg, each serving a different purpose:

- **Yolk Sac Inoculation:** This is mainly used for viruses that need to infect the embryo's developing cells.
- **Amniotic Sac Inoculation:** This method is used for viruses that replicate in the amniotic fluid and tissues.
- **Allantoic Sac Inoculation:** Frequently used for viruses that grow well in the allantoic fluid and have the ability to affect the embryo indirectly.

3. Advantages of Cultivating Viruses in Embryonated Eggs:

- **Cost-effective:** Embryonated eggs are relatively inexpensive and accessible.
- **High Yield:** The embryonated egg provides a conducive environment for virus propagation, allowing for a high virus yield.
- **Safety and Purity:** Since the virus is contained within the egg, contamination risks are minimized, and virus strains can be carefully controlled and isolated.

4. Limitations of Embryonated Egg Cultivation:

- **Limited to Certain Viruses:** Not all viruses can grow in embryonated eggs, especially those that require mammalian cells for replication.
- **Ethical Concerns:** The use of live embryos raises ethical concerns, especially related to animal welfare.
- **Time-Consuming:** The process can be slow, requiring several days for the virus to propagate within the embryo.

One-line Questions with Answers on Cultivation of Virus in Embryonated Egg

1. Which part of the egg is used to cultivate the influenza virus?

Answer: The allantoic sac is typically used to cultivate the influenza virus.

2. Why is the embryonated egg considered cost-effective for virus cultivation?

Answer: Embryonated eggs are inexpensive and widely available, making them a cost-effective option.

3. What is the primary disadvantage of using embryonated eggs for virus cultivation?

Answer: The primary disadvantage is that not all viruses can replicate in embryonated eggs.

4. Which part of the egg is suitable for viruses that need to replicate in amniotic fluid?

Answer: The amniotic sac is suitable for viruses that replicate in amniotic fluid.

5. How long does the virus cultivation process typically take in embryonated eggs?

Answer: The process can take several days, depending on the virus and incubation conditions.