

جامعة الانبار

كلية: الصيدلة

قسم: العلوم المختبرية السريرية

اسم المادة باللغة العربية: الاحياء المجهرية

اسم المادة باللغة الإنكليزية: **microbiology**

المرحلة: الثانية

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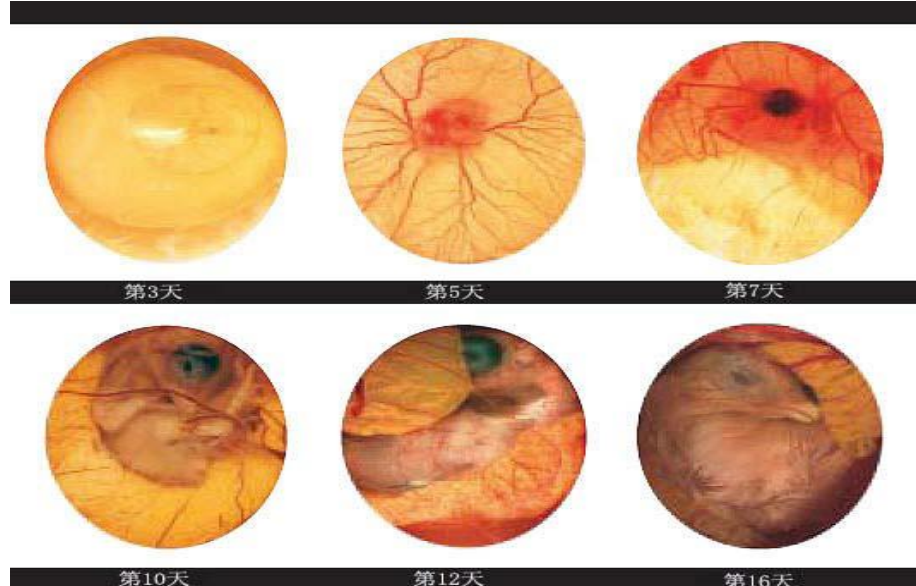
عنوان المحاضرة باللغة العربية: حقن البيض

عنوان المحاضرة باللغة الإنكليزية: **Egg inoculation**

## Egg inoculation

### Embryonated egg

The process of cultivation of viruses in an Embryonated eggs depends on the type of egg which used. The egg used for cultivation must be sterile and shell should be intact and healthy



## Fertile eggs

To cultivate viruses in eggs, the procedure adopted should be very simple. the eggs are kept in incubator and embryos of 7-12 days old are used. The egg containing embryo usually has an air space at the larger end. The position of this sac is first determined.

## Advantages of fertile eggs

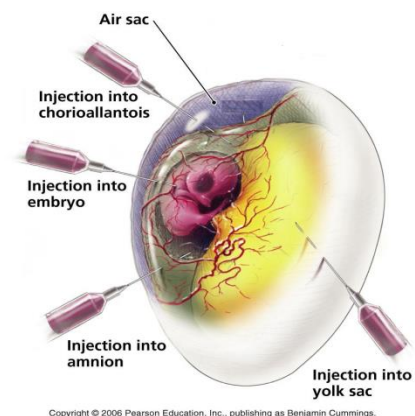
Fertile chicken eggs provide a convenient, space-saving incubator for many kinds of animal viruses. Different viruses can be injected into an egg at different sites and the egg can be easily observed for viral replication throughout the development of the chicken embryo.

## Advantages of used an embryonated eggs

- Isolation and cultivation of many viruses.
- ideal receptacle for virus to grow.
- Sterile and wide range of tissues and fluids.
- Cost much less.
- Maintenance easier.
- Readily available.
- Free from contaminated agent.

## Routes of inoculation

- i. Yolk sac.
- ii. Allantoic sac.
- iii. Chorioallantoic sac .
- iv. Amniotic cavity.



## Exercise with candling eggs

Candling is the process of holding a strong light above or below the egg to observe the embryo. A candling lamp consist of a strong electric bulb covered by a plastic container that has an aperture.

The egg is placed against this aperture and illuminated by the lighte.



## Materials needed for egg inoculation

- ✓ 9-11 day old embryonated eggs.
- ✓ Egg shell punch.
- ✓ Eggs holders.
- ✓ Cotton wool.
- ✓ 70% alcohol solution.
- ✓ Syringe 1 ml.
- ✓ Stationary tape (also called cello or sticky tape) to close the inoculation site.
- ✓ Inoculum.
- ✓ Discard tray.



## Marking the inoculation site

1. Hold the blunt end of egg onto the candle box.
2. With marker pointed the site of inoculation.
3. Drilling pinpoint whole – embryonated chicken egg.



## Inoculation the egg

- Use cotton wool and 70% alcohol to clean the end of the egg to be inoculate.
- Swab the eggshell punch with 70% alcohol.
- Pierce a hole in the inoculation site.
- Draw inoculum into 1ml syringe.
- Inject 0.1ml of inoculum into the egg.
- Seal the hole in the shell with tape.
- Place the inoculated eggs into incubator.

## **Eggs are used for mass vaccine production in Influenza**

Animals and chick embryo were the first method that was used to cultivate virus this method is rarely used as it is not convenient however, when preparing for bulk virus, [e.g. antigen or vaccine production] the usage of chick embryo is useful.