Virus isolation & cultivation.

Virus Isolation is a highly relevant and important testing method used assist in the diagnosis of viral infections, including those of emerging, re-emerging, and novel viral pathogens. Isolation and identification of viruses using cell culture methods in embryonated chicken eggs, bovine, equine, canine, feline, camelids, avian, reptiles, and various wildlife and exotic species. Turnaround time for the testing varies and is largely dependent on the rate of growth/replication of the virus and the method ultimately used to identify the virus. Fresh samples provide the most reliable results.

Virus isolation is a very specific method for diagnosis of viral infection and also generate a supply of virus for research purposes.

- Tools for virus isolation: Lab animals (limited due to high cost and ethical reasons).
- Embryonated Eggs (influenza A and some Avian viruses) Cell Culture (monolayer/suspension)

Testing Strategies

Respiratory Disease

1. Nasal Swabs, Pharyngeal Swabs, oral swabs
2. Tracheal wash, broncho-alveolar lavage
3. Upper airway tissues, lung

Neurological Disease

1. Brain, brain stem, spinal cord
2. CSF (Cerebral Spinal Fluid)
3. EDTA Whole Blood

Enteric Disease

1. Feces
2. Jejunum, ileum, cecum, colon

Reproductive Disease/Abortion

1. Placenta
2. Fetal Tissues: lung, liver, kidney, spleen, adrenal
3. Vaginal or preputial swabs

Not

Swabs in bacterial transport medium are not appropriate for virus isolation or PCR testing. If viral transport media is unavailable, place swabs in a sterile tube (e.g. 15 ml conical tubes or red top tube) with a few drops of saline. For best results collect fresh samples, then store and ship them refrigerated.

Virus cultivation.

Viruses are obligate intracellular parasites so they depend on host for their survival. They cannot be grown in non-living culture media or on agar plates alone, they must require living cells to support their replication.

The primary purpose of virus cultivation is:

1. To isolate and identify viruses in clinical samples.
2. To do research on viral structure, replication, genetics and effects on host cell.
3. To prepare viruses for vaccine production.

Cultivation of viruses can be following headings:

1. Animal Inoculation
2. Inoculation into embryonated egg
3. Cell Culture

What Is Virus Cultivation Test?

This test checks to see whether an infection is caused by a bacterium or a virus. It can also tell which specific virus is causing your infection.

Viral infections can cause illnesses anywhere in the body. This includes the skin, digestive tract, urinary tract, brain, lungs, and eyes. These illnesses can range from minor problems to serious diseases.

Viral cultures are done in different ways, depending on your condition and the virus the healthcare provider thinks you may have. You may need to give a sample of blood, urine, or bodily fluids. In general, your test sample will be treated in the lab to keep the cells alive and allow them to grow. After a certain period of time, your culture sample will be checked to see if viruses are growing.

Why do I need this test?

You may need this test if your healthcare provider needs to find out whether you have a medical problem caused by a virus. Viral infections include bronchitis, pneumonia, meningitis, and encephalitis.

What other tests might I have along with this test?

Your healthcare provider may also order tests using bodily fluids or tissue samples to look for:

- The genetic material of the virus
- Antibodies that your body has made against a virus

What do my test results mean?

Test results may vary depending on your age, gender, health history, the method used for the test, and other things. Your test results may not mean you have a problem. Ask your healthcare provider what your test results mean for you.

Normal results are negative, meaning you don't have the virus in your body. Positive results mean that a virus grew in the culture and that you have a viral infection.