



## Lecture Two – *part 2*

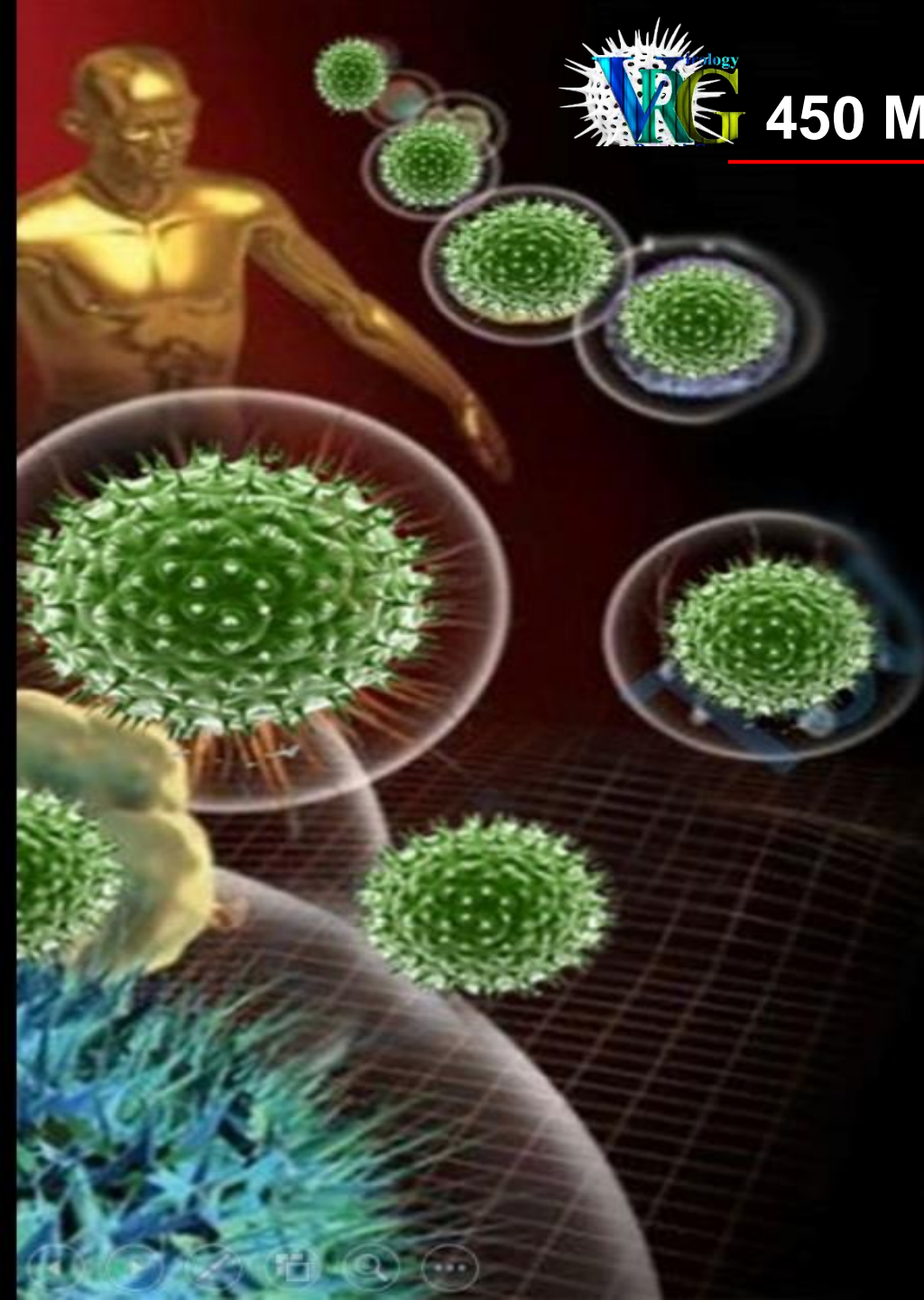
### Definitions

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## **Definitions**

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**Viroid:** Autonomously replicating plant pathogens consisting solely of unencapsidated, single-stranded, circular (rodlike) RNAs of 200 to 400 nucleotides. Viroids do not encode any protein products.

**Virusoids:** Small satellite RNAs with a circular, highly base-paired structure similar to that of a viroid; depend on a plant virus for replication and encapsidation but do not encode any proteins.

**Prion:** A proteinaceous infectious particle, believed to be responsible for transmissible spongiform encephalopathies such as Creutzfeldt-Jakob disease (CJD) or bovine spongiform encephalopathy.

**Prophage:** The lysogenic form of a temperate bacteriophage genome integrated into the genome of the host bacterium.

**Provirus:** The double-stranded DNA form of a retrovirus genome integrated into the chromatin of the host cell.

**Virion:** The complete virus particle.



## **Definitions**

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**Capsid:** The protein shell, or coat, that encloses the nucleic acid genome.

**Capsomeres:** Morphologic units seen in the electron microscope on the surface of icosahedral virus particles.

**Envelope:** A lipid-containing membrane that surrounds some virus particles. It is acquired during viral maturation by a budding process through a cellular membrane.

**Nucleocapsid:** The protein-nucleic acid complex representing the packaged form of the viral genome.

**Protomer** : The basic protein building blocks of the coat. They are usually a collection of more than one nonidentical protein subunit.

**Icosahedron:** A solid shape consisting of 20 triangular faces arranged around the surface of a sphere; the basic symmetry of many virus particles.





## **Definitions**

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**Genome:** The nucleic acid comprising the entire genetic information of an organism.

**Helix:** A cylindrical solid formed by stacking repeated subunits in a constant relationship with respect to their amplitude and pitch.

**Negative-sense:** The nucleic acid strand with a base sequence complementary to the strand that contains the protein-coding sequence of nucleotide triplets or a virus whose genome consists of a negative-sense strand.

**Receptor:** A specific molecule on the surface of a cell to which a virus attaches as a preliminary to entering the cell. May consist of proteins or the sugar residues present on glycoproteins or glycolipids in the cell membrane.



## **Definitions**

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**AIDS:** Acquired Immunodeficiency Syndrome: A disease of humans caused by Human immunodeficiency viruses (HIV) 1 and 2.

**Adjuvant:** Substance added to antigens to enhance immune response. Salts of aluminum (e.g. hydroxide or phosphate) acceptable for use in humans. Saponin or Freund's adjuvant used only in experimental animals.

**Acute infection:** Severe, sudden and short period infection.

**Anoxia:** Oxygen deficiency.

**Asthma:** is a chronic lung disease that inflames and narrows the airways. Asthma causes recurring periods of wheezing (a whistling sound when you breathe), chest tightness, shortness of breath, and coughing.



## **Definitions**

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**Bronchiolitis:** is a common illness of the respiratory tract. It's caused by an infection that affects the tiny airways, called the bronchioles.

**Bronchitis:** infection of the larger airways of the lung.

**Chronic infection:** long-term infection.

**Cirrhosis:** the liver becomes shrunken, hardened and fails to function normally.

**Croup:** is a common respiratory problem in young children. It tends to occur in the fall and winter. Its main symptom is a harsh, barking cough. Croup causes swelling and narrowing in the voice box, windpipe, and breathing tubes that lead to the lungs.

**Cytopathic Effect (CPE):** Structural changes in host cells that are caused by viral invasion. The infecting virus causes lysis of the host cell or when the cell dies without lysis due to an inability to reproduce.



## **Definitions**

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**Dyspnoea:** A case of breathing difficulty.

**Fever:** A temperature above the normal level of 37°C.

**Febrile:** The presence of Fever.

**Gastroenteritis:** inflammation of the stomach and intestine associated with vomiting and/or diarrhea.

**Inflammation:** Reaction of the body to an injury. Signs of inflammation are redness, heat, swelling, and tenderness.

**Infection:** infection of the body by harmful organisms that cause disease.

**Nausea:** an unpleasant sick feeling in the stomach area.





## **Definitions**

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**Pneumonia:** is an infection that inflames the air sacs in one or both lungs. The air sacs may fill with fluid or pus (purulent material), causing cough with phlegm or pus, fever, chills, and difficulty breathing.

**Prophylaxis:** treatment given or action taken to prevent disease

**Pathogenicity:** The potential capacity of certain microbes to cause disease.

**Pathogenesis :** Description of the development of a particular disease (events, reactions and mechanisms) at cellular level.

**Virulence:** The capacity of a Pathogen (infectious agent) to produce disease in the host.

**Infection:** The invasion of host body tissues by pathogenic micro-organisms resulting in tissue injury that may progress to disease.





## **Definitions**

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**Primary infection:** A primary infection is the first time you are exposed to and infected by a pathogen. During a primary infection, your body has no innate defenses against the organism, such as antibodies.

**Secondary infection:** Does not refer to the second time a person becomes infected with the same illness. It is also called opportunistic infections. It is a different infection, which can thrive in a person who has a primary infection.

**Viral Hepatitis:** inflammation of the liver by viruses such A, B, and C.

**Vaccine:** Is a biological preparation that provides active acquired immunity to a particular disease.

**Viremia:** The presence of the virus in the blood.

**Virurea:** The presence of the virus in the urine.

# Learning outcomes Reviewing

- Have the knowledge of virus shapes and sizes.
- Define virus structure and the function of virus coatings.
- Recognize different types of virus nucleic acids.
- Recognize different types of virus capsid.
- Familiar with different terms related to virus structure and pathogenesis.

