BT102 Final term

Composed by

AAMIR ALI AAMIR AND MALIK'S

Immune and Its Types? Define Imunity and Its types? Innate and adaptive immunity? (10)

Immunity is the balanced state of multicellular organisms having adequate biological defenses to fight infection, disease, or other unwanted biological invasion, while having adequate tolerance to avoid allergy, and autoimmune diseases.

Innate Immunity

Plants and animals have what is called innate immunity. Innate immunity is the first line of defense against pathogens. It involves several cell types, proteins, and even an organ. The organ involved is your skin. Yes, skin is part of the first line of defense. It protects you and prevents pathogens from getting inside your body.

Adaptive immunity is an important part of the immune system. It is protection from an infectious disease agent that is mediated by B- and T- lymphocytes following exposure to specific antigen, and characterized by immunological memory.

Economies use of fungi?

They play an important role in medicine yielding antibiotics, in agriculture by maintaining the fertility of the soil and causing crop and fruit diseases, forming basis of many industries and as important means of food.

Gram Staining Procedure?

Crystal violet is added. – Primary stain

- Crystal violet is washed off.
- Iodine is added to enhance binding. – Mordant.
- The slide is washed off with alcohol. – Decolorizing agent

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• Gram positive bacteria retain crystal violet

• Gram negative bacteria appear colorless.

• Crystal violet and iodine make a complex in the cytoplasm

• Peptidoglycan layer is thicker in Gram positive bacteria and CV-I is retained.

• Alcohol is rinsed off and stained with safranin. – Counterstain

• The smear is washed again.

• Blotted dry and examined microscopically.

Difference Simple and Differential Media?

Selective and differential media are used to isolate or identify particular organisms. Selective media allow certain types of organisms to grow, and inhibit the growth of other organisms. ... Differential media are used to differentiate closely related organisms or groups of organisms.

Horizontal and Vertical Gene Transfer?

Vertical gene transfer – Parents to offsprings • Horizontal – From cells to cells within the same generation – From bacteria to bacteria.

Difference LB Broth and LB Agar? LB Broth: broth (LB) is a nutritionally rich medium primarily used for the growth of bacteria. Its creator, Giuseppe Bertani, intended LB to stand for lysogeny broth, but LB has also come to be commonly referred to as Luria broth, Lennox broth, orLuria-Bertani medium.

LB Agar: Luria broth (LB) is a nutrient-rich media commonly used to culture bacteria in the lab. The addition of agar to LB results in the formation of a gel that bacteria can grow on, as they are unable to digest the agar but can gather nutrition from the LBwithin.

Chemical used in Gram staining?

Both gram-positive and gram-negative cells have peptidoglycan in their cell walls, so initially, all bacteria stain violet. Gram's iodine (iodine and potassium iodide) is applied as a mordant or fixative. Gram-positive cells form a crystal violet-iodine complex. Alcohol or acetone is used to decolorize the cells.

Briefly describe Transduction, conjugation and transformation?

Transformation: Transformation can occur in vitro

• In broth culture, live noncapsulated organisms cultured.

• Dead capsulated cells mixed with it.

• Capsulated bacteria were recovered from broth.

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• Research revealed it to be DNA.

Conjugation:

• Conjugation is mediated by sex pili and plasmids or F factors can be transferred.

Transduction: Transduction is the process by which foreign DNA is introduced into a cell by a virus or viral vector. An example is the viral transfer of DNA from one bacterium to another and hence an example of horizontal gene transfer.

Kartography plasmogamy and meiosis?

Plasmogamy: A haploid nu acnledu sM oef iao sdios n2o r cell (+) penetrates the cytoplasm of a recipient cell (-). Both cells are haploid (one set of chromosomes).

Karyogamy: The (+) and (-) nuclei fuse to form a diploid zygote nucleus.

Meiosis: The diploid nucleus gives rise to haploid nuclei (sexual spores).

Advantage of Dry Heat Sterlizatin?

Advantages of dry heat sterilization include: it is inexpensive, it does not pollute or cause toxic fumes, and it does not corrode or rust metal objects.Disadvantages include: it is relatively slow and many objects cannot withstand the high temperatures.

How Microoragnism cause damged the body?

Infection with a pathogen does not necessarily lead to disease. Infection occurs when viruses, bacteria, or other microbes enter your body and begin to multiply. ... Pathogenic microbes challenge the immune system in many ways. Viruses make us sick by killing cells or disrupting cell function.

Microbial Identification?

Microbial identification can be defined as “microbial characterization by a limited spectrum of tests pre-chosen and appropriate to the problem being studied” Methods: Classical or Conventional Method, Serological testing, Nucleic acid based testing.

Write two method? Viral Replication and Its mechanism?Stage of Viral Replication?

Viral replication involves six steps: attachment, penetration, uncoating, replication, assembly, and release. ... During uncoating, replication, and assembly, the viral DNA or RNA incorporates itself into the host cell's genetic material and induces it to replicate the viral genome.

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Viruses, Virion, and Virusoid and Prion?

Viruses: Acellular organisms – Proteins and nucleic acids

- Viroids: composed only of circular ssRNA (potato spindle tuber viroid)
- Virusoids: Contain circular ssRNA, need helper viruses for replication and encapsidation; also called satellite viruses

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• Prions: Infectious proteins

Uses of UV in Lab?

Transilluminators. Used for the visualization of molecular samples, transilluminators are indispensable tools for researchers at life-sciences laboratories. ... UV Crosslinkers. ... Fluorescence Analysis Viewing Cabinets and Work Stations. ... Ultraviolet Lamps. ... Digital Radiometers/Photometers

Epidemiology and Its type?

Monitoring diseases in a population

• Detection of outbreaks and developing epidemics

• Implementation of appropriate control measures

• Surveillance studies.

There are four most common types of epidemiological studies:

**Cohort Study. Case Control Study. Occupational Epidemiological Study. Cross-Sectional Study. **

Epidemiologists use statistical methods to determine whether the differences they see are real or due to chance fluctuations.

Streaking Plates method?

Streak plate technique is used for the isolation into pure culture of the organisms (mostly bacteria), from mixed population. The inoculum is streaked over the agar surface in such a way that it “thins out” the bacteria. Some individual bacterial cells are separated and well spaced from each other.

Process of bacterial identification?

The identification of bacteria is a careful and systematic process that uses many different techniques to narrow down the types of bacteria that are present in an unknown bacterial culture. It produces benefits for many aspects of the research of microorganisms and helps physicians correctly treat patients.

Physical Method of Sterlization?

Heat Method of Sterilization This is the most common method of sterilization. The heat used kills the microbes in the substance. ... In heatsterilization process, the longer the exposure to heat the better is the sterilization at a given temperature.

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Disadvantage of Chlorine Sterilization?

disadvantages as well; First of all high concentration of this agent corrodes metals and also damages cloths. Secondly the strength of this solution decreases with time so whenever you want to use it always prepare its fresh solution.

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FORE MORE INFO

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