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**Q no 1. Define the following terms.**

**Answers**

1 **Immunology**. Immuno is a word of Latin which mean the system of protection.

Immunology is the branch medical and biological field which related to immune system.

**2. serology** . The word serology consist of two words ‘sera’ mean serum

And ‘logy’ mean to study.

The scientific study dealing with the blood serum. Or diagnostic examination of blood

Serum.

**3 Antibody**. Also known as immunoglobulin.

It is large it is a Y- shaped protein. It is present in plasma. Antibody release against antigen which destroy foreign particles. (Bacteria , virus ETC ).

**4 .Antigen.** Those foreign substance (pathogen’ toxin) that influence immune response.

**Q .3; Write note on immunoglubline.**

Answer

**Immunoglobline**

* Also known Antibodies
* It is large in it is 4 shaped protein.
* It is present in plasma .Antibody release against antigen which destroy foreign particle.
* Blood contain 3 type of protein ( Alpha ,Beta and Gama). So antibodies are Gama protein.
* 20% of protein in blood plasma.

**Functions**

* Neutralize Toxin and virus.
* Phagocytosis
* Help in the attachment of microbes in mucosal surface.

**Classes of immunoglobline**

Immunoglobline have five types

IgG , IgA, IgM, igE, IgD

**IgG ( Immunuglobline Gama)**

* Are class of Immunuglobline.
* It is found in blood circulation and it is the most common type
* Release from plasma
* Molecular weight = 15x1000
* 75% ( Total present in serum)

**IgM (Immunuglobline MEU)**

* It has two form Monomeric(B-cell)
  + - * Pentamic (in serum)
* It produced in primary response of infection.
* 9% present in serum
* Molecular weight=900x1000.

**IgE ( Immunuglobline Epsilon )**

it mainly take place in allergic reaction.

**IgO (immunuglobline Delta)**

Mostly Found in blood.

Q no 2. Difference between Innate and Acquired immunity?

**Answer**

|  |  |
| --- | --- |
| **Innate Immunity**   * Also known as natural or native immunity. * It is present at birth due to his genetic or * Constitutional markup. Non-specific immunity always present . * Low potency immune response. * Immunological Memory are absent. | **Acquired immunity**   * Also Known as specific or adoptive immunity. * it depend on external Environment during the course Of life. * Specific immunity * normal silent but active   + To foreign substance high potent. * Immunological Memory are present. |

**Q4. Describe autoimmune disorders and its types?**

**Answer**

**Auto Immune disorder**

When immune system of the host mistakenly attacks your body healthy cell and tissue.

In auto immune disorders your immune system are react against your body parts.

These cell are tissue attach by component of immune system. this lead to auto immune disease.

There are two types of auto immune disease .

1. Localized 2. Systemic

**1 . Localized Auto immune disease.**

* Organ Specific auto immune disease
* usually target on a specific organ or tissue due to auto antibodies.

Examples;

* hashmotois thyrodisis
* Type-1 diabetes melitus
* Auto immune Anemia
* Myasthenia Gravis

**2. Systemic autoimmune disease**

* (non-organ specific auto immune disease)
* They usually effect more then one tissue or cell.

Example;

* + Systemic lupus
  + multiple Sclerosis
  + Rheumetoid Arthritis

**Q 5 Explain Active and Passive immunity?**

**Answer**

There are two types of Acquired Immunity.

**1.Active Acquired Immunity**

* Resistance induced after contact with foreign antigen ( Micro Organism )

It show long term resistance.

slow on set

**2.Passive Acquired Immunity**

* + Resistance Induced based on antibodies performed in another host (animal or human being)
  + It show short term resistance.
  + Quickly Availability of large amount of antibodies.

**Q 6. What are the different factors that affects immunogenicity?**

**Answer.**

***Factor effecting immunogenicity***

**Foreignness:**

* To be immunogenicity molecules must be recognized as Non-self

i-e foreign.

* Those particle whose molecular mass are less then 5000 to 10000 D2 have week immunogen.

**Chemical Structure:**

As we know that antigen are protein and also polysaclerides.

In general , chemically more complex and the particle is more immunogenic.

**Dosage route timing;**

In adequate dosage of immunugen can not get immune response .

**Adjuvants:**

These are substance that are combine or put together and injected with antigen enhances the immunogenicity of antigen .