

Immunology

Archive

Lecture 1

Corrected By :

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1.) Active artificially acquired immunity is a result of _____.

Select one:

- A. Injection of an immune serum.
- B. Contact with a pathogen.
- C. Antibodies passed on from mother to fetus through the placenta.
- D. Vaccination.
- E. Antibodies passed on from mother to baby through breast milk.

Answer: D Vaccination.

2.) All of the following are true of antigen, EXCEPT which one of the following?

Select one:

- A. They contain epitopes.
- B. They will react with antibodies.
- C. They contain antigenic determinants.
- D. They can elicit an immune response.
- E. They contain paratopes.

Answer: E. They contain paratopes.

3.) Which of the following substances will not stimulate an immune response unless they are bound to a larger molecule? Select one:

- A. Antigen
- B. Virus
- C. Hapten
- D. Miligen
- E. Antibody

Answer: C. Hapten.

4.) Concerned Adjuvants, all of the following are false, EXCEPT:

Select one:

- A. Substance that enhance the immune response.
- B. Called antigenic determinants.
- C. it's the antibodies that passed on from mother to fetus.
- D. it's a vaccination against viral infection.

Answer: A. Substance that enhance the immune response.



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Lecture 2

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1. A polymorphonuclear neutrophil (PMN):

Select one:

- a) Is a bone marrow stem cell.
- b) Is a closely similar to a mast cell.
- c) Contains microbicidal cytoplasmic granules.
- d) Is not a professional phagocytic cell.
- e) Has granules which stain with eosin.

answer:c

2. The paracortical area of lymph node comprises mainly:

Select one:

- a) Follicular dendritic cells
- b) Plasma cells
- c) Neutrophils
- d) B-cells
- e) T-cells

Answer: E

3. B cells mature in the.....

...while T cells mature in the Select one

- a) Thymus/bone marrow
- b) Spleen/bone marrow
- c) Bone marrow / Thymus
- d) Liver/Kidneys
- e) Bone marrow spleen

Answer: C

4. All of the following are true of antigen EXCEPT which one of the following?

Select one:

- a) They contain epitopes.
- b) They will react with antibodies.
- c) They contain antigenic determinants.
- d) They can elicit an immune response
- e) They contain paratopes

Answer: E

5. DiGeorge syndrome (lab)

Select one:

- a) Genetic defect in cytokines
- b) Is an immune deficiency disease
- c) Leads to tumor formation
- d) Leads to defect in thyroid gland
- e) Leads to defect in innate immunity

Answer: D

6. T cell surface receptors for antigen partly recognize

Select one:

- a) Cytokines
- b) MHC
- c) ADCC
- d) Antibody
- e) IL-2

Answer: B

7. The mononuclear phagocyte system does not include:

Select one:

- a) Monocytes.
- b) Kupffer cells
- c) Kidney mesangial cells.
- d) Microglial cells in brain.
- e) Endothelial cells.

Answer: E

8. What is the major site for naïve B and T cells activation:

Select one:

- a) Spleen
- b) Bone marrow
- c) Lungs
- d) Thymus
- e) Kidney

Answer: A

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Lecture 3

Medical card .

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48) Negative feedback of B cell activation:

- A. CD5
- B. CD11
- C. CD20
- D. CD22
- E. CD86

Answer:D

20) All the following in the b cells except ?

- A. CD2
- B. CD22
- C. CD40
- d.CD40LN

Answer:D

1. Which of the following accurately describes a difference between B cells and plasma cells?

- A) Plasma cells express CD20, while B cells do not.
- B) Plasma cells are the primary cells responsible for antibody production, while B cells do not produce antibodies.
- C) B cells have a high level of immunoglobulin production, whereas plasma cells do not.
- D) B cells are short-lived and primarily function in antibody production, while plasma cells are long-lived and produce antibodies.

Answer:b

20. All of the following are expressed on B cells except:

- A) CD19
- B) CD20
- C) CD21
- D)CD40LN

answer: D

133)Predominant immunoglobulin in external secretions such tears, mucous is

Select one

- a) igE
- b) IgM
- c)IgA
- d) ig G
- e)ig D

answer: C

134) The germinal center is an important site of Select one:

- a) Hematopoiesis
- b) B-cell maturation
- c) B-cell receptor editing
- d) Myeloid cell differentiation.
- e) antibody V gene rearrangement

Answer: b

145) The class of an immunoglobulin Select one:

- a) is determined by Class I and Class II major histocompatibility complex proteins
- b) is determined by the carbohydrate attached to the light chain is
- c) determined by the variable part
- d) is determined by the heavy chain type
- e) Is determined by the J-chain

Answer: D

147) Which of the following is the first step in the specific immune response to antigen? Select one

- a) Memory cell formation
- b) Secretion of antibody molecules
- c) Antigen presentation to T helper cell
- d) Secretion of cytokines by T helper cell
- e) plasma cell formation

Answer: C

148) This immune cell is able to respond quickly after any second encounter with the same antigen Select one

- a) basophil
- b) helper T cell
- c) memory cell
- d)antigen - presenting cells
- e) plasma cell

Answer: C

103) Somatic hypermutation is Select one:

- a) Commonly found in both ig and T-cell receptor genes
- b) Restricted to the constant region.
- c) Restricted to the beta chain
- d) Found only in Ig heavy chains
- e) Found only in Ig variable regions

Answer: E

120) Which of the following is the ligand for the B cell coreceptor Select one

- a) c3
- b) C3b
- c) IL-2
- d) C3d
- e) CR2

Answer: D

61) The effect of AB is determined by?

- A) constant region of Heavy chain
- b) variable region of light chain
- c) constant region of light chain
- d) variable region of heavy chain

Answer: A

62) Somatic hyper mutation is due to:

- a) Change in the variable region of heavy chain, constant unchanged
- b) Constant region of heavy chain changed, variable region is unchanged
- c) Variable region of light chain is changed, constant is unchanged
- d) Constant of light chain is changed, variable is unchanged
- e) Both variable and constant regions are changed

Answer: A

67): The disease that result from mutation in CD40L gene is

- a) Acquired immune deficiency syndrome
- b) X-related Hyper-IgM syndrome
- c) Hyper-IgM syndrome
- d) paroxysmal nocturnal haemoglobinuria
- e) hereditary angioedema

Answer: B

68): B cells in the periphery that haven't exposed to antigens before called:

- a) pre-B cells
- b) mature
- c) immature
- d) naïve
- e) pro-B cells

Answer: D

50) Deletions in the T-cell CD154 (CD40L) gene produce:

Select one:

- a) Congenital X-linked agammaglobulinemia
- b) IgA deficiency.
- c) Deficiency in cytotoxic T-cell activity
- d) The hyper—IgM syndrome.
- e) Wiskott-Aldrich Syndrome.

Answer: D

53) Somatic hyper mutation. Select one:

- a) Occurs in the Bone Marrow.
- b) Involves immunoglobulin V genes
- c) Do not need T cell help.
- d) Can decrease the affinity of an antibody.
- e) Is Changing the variable part on light chain.

Answer: B

44) All are T-independent B cells except

Select one:

- a) Marginal zone B cells
- b) B1 cells
- c) CD5 B cells
- d) Follicular B cells
- e) Natural antibody-producing cells

Answer: D

46) Germinal center is incubated with

Select one:

- a) Activated T cells
- b) Activated B cells
- c) Antibodies
- d) Naïve B cells
- e) Naive T cells

Answer: B

49) The molecules mediating signal transduction following antigen binding to cell surface immunoglobulin on a B-cell are called:

Select one:

- a) Ig Fc
- b) Ig-alpha and Ig-beta
- c) MHC
- d) Ig-delta
- e) CD8

Answer: B

27)an example of a molecule present in memory cells is:

select one:

- a) Bcl-2
- b) TRAIL
- c) Bax
- d) FADD
- e) Caspase 8

Answer: A

36)Isotype switch occur in

Select one:

- a) Paracortical area of lymph node
- b) Cortex of lymph node
- c) Bone marrow
- d) Medulla
- e) Circulation

Answer: B

39)Which of the following characteristics is common to both T cell receptors and immunoglobulins

- a) The antigen receptors composed of two identical heavy chains and two identical light chains
- b) Receptor editing for both occurs in bone marrow
- c) Their production occurs in bone marrow
- d) Somatic recombination V, D and J segments is responsible for the diversity of antigen binding site
- e) Somatic hypermutation changes the affinity of antigen-binding sites in both and contributes to further diversification

Answer: D

12)Which of the following proteins does NOT make up the B cell co-receptor?

Select one :

- a) CD19
- b) CD21
- c) CD20
- d) CD81
- e) CD2

Answer: C

17) The enzyme responsible for isotype switch is

Select one:

- a) Activation-induced cytidine deaminase (AID)
- b) Synapse
- c) RAG-1 and 2 recombinase
- d) Artemis endonuclease
- e) Ligase

Answer: A

11) After B cells activation in the peripheral lymph nodes All are true except

Select one:

- a) B cell converted to CD20+ plasma cells
- b) Memory B cell enter circulation
- c) Plasma cells reside in the medulla
- d) Antibodies enter the circulation
- e) B cells from germinal center

Answer: A



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Lecture

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Medical card

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Address _____

Date of call _____

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1. All the following opsonins except?

- A. C3a
- B. C3b
- C. C5b

Answer: A

2. Which one of these options creates C5 convertase?

- A) C3bBb
- B) C4b2a
- C) C2b4b3b
- D) C4b2a3b

answer : c

3. Which one of these complement proteins causes chemotaxis?

- a) C5b
- b) C7
- c) C3a
- d) C9

Answer: c

4. What is correct about C3b?

- a) Causes cell lysis
- B) Opsonization of antigen
- C) triggers immunization
- d) Induces chemotaxis

Answer: b

5. Complement proteins work by..

... Select one:

- a) neutralization of antigens
- b) creating an impermeable barrier
- c) phagocytosis of target cells
- d) forming pores in the membranes of target cells
- e) producing

Answer: D

6. Which of the following is not involved in first line defense? Select one of

- a) Mucus membranes
- b) Saliva
- C) Tears
- d) Antibodies
- e) Epidermis

Answer: D

7. A complement component which is strongly chemotactic for neutrophils is

Select one

- a) C9
- b) C5a
- c) C3
- d) C3b
- e) C5

Answer: B

8. The initial complement component that is bound by complement-fixing, antibodies is Select one

- b) C1s
- d) C5a
- e) C9

Answer: A

9. The classical and alternative pathways meet at complement component Select one

- a) C4
- b) C4b
- c) Factor D.
- d) C5
- e) C3

Answer: E

10. Complements that act as anaphylatoxins

- a) C3a and C5a
- b) C3b and C4b
- c) C3d and C3b
- d) C4b and C2b
- e) C5-8

Answer: A

11. Complement component C3 in alternative pathway is cleaved by

Select one:

- a) C3b
- b) C3bBb
- c) Factor B
- d) Simultaneously by antigen
- e) Simultaneously by antigen and antibody

Answer: B

immunology

Lecture 6

12. Classical complement pathway are all true except

Select one

- a) Is an effector arm of adaptive immunity
- b) Opsonizes bacteria
- c) Produce chemotactic and anaphylatoxin
- d) Directly activated by bacteria
- e) Is firstly discovered

Answer: D

12. Paroxysmal nocturnal hemoglobinuria results from deficiency in:

Select one:

- a) Myeloperoxidase
- b) Decay accelerating factor. (DAF)
- c) Classical pathway C components
- d) C1 inhibitor
- e) CD59

Answer: E

13. A lectin pathway in complement activation is all of the following except:

Select one:

- a) C3 convertase is the same as in classical pathway
- b) Depend on antigen-antibody binding as classical pathway (classical **just**)
- c) Involve C2 activation
- d) Involves C3b
- e) Involves C5b

Answer: B

14. Anaphylatoxins C3a and C5a do their function by:

- a) Binding their receptors on mast cells
- b) Binding their receptors on endothelial cells
- c) Binding their receptors on B cells
- d) Binding their receptors on DCs

Answer: A

15. Complement component C3 in alternative pathway is cleaved by

Select one:

- a) C3b
- b) C3bBb
- c) Factor B
- d) Simultaneously by antigen
- e) Simultaneously by antigen and antibody

Answer: B

16. Classical complement pathway are all true except

Select one

- a) Is an effector arm of adaptive immunity
- b) Opsonizes bacteria
- c) Produce chemotactic and anaphylatoxin
- d) Directly activated by bacteria
- e) Is firstly discovered

Answer: D



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Lecture 5

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1) Anaphylatoxins C3a and C5a do their function by:

- a) Binding their receptors on mast cells
- b) Binding their receptors on endothelial cells
- c) Binding their receptors on B cells
- d) Binding their receptors on DCs

Answer: A

2) The IGG with the highest complement activation is:

- a) IGG1
- b) IGG2
- c) IGG3
- d) IGG4
- e) IGG5

Answer: C

3) A lectin pathway in complement activation is all of the following except:

Select one:

- a) C3 convertase is the same as in classical pathway
- b) Depend on antigen-antibody binding as classical pathway
- c) Involve C2 activation
- d) Involves C3b
- e) Involves C5b

Answer: B

4) Complement component C3 in alternative pathway is cleaved by

:Select one

- a) C3b
- b) C3bBb
- c) Factor B
- d) Simultaneously by antigen
- e) Simultaneously by antigen and antibody

Answer: B

5) Classical complement pathway are all true except

Select one

- a) Is an effector arm of adaptive immunity
- b) Opsonizes bacteria
- c) Produce chemotactic and anaphylatoxin
- d) Directly activated by bacteria
- e) Is firstly discovered

Answer: D

6) Complements that act as anaphylatoxins

- a) c3a and c5a
- b) c3b and c4b
- c) c3d and c3b
- d) c4b and c2b
- e) c5-8

Answer: A

7) Factor H and decay accelerating factor (DAF) function is:

- a) removes Bb from the alternative pathway C3 convertase
- b) inhibit association of C9 with C5b-8
- c) inactivates C3b
- d) shutting down the proteolytic activity of C1s and C1r

Answer: A

8) The initial complement component that is bound by complement-fixing antibodies is Select one

- a) C1q
- b) C1s
- c) C3b
- d) C5a
- e) C9

Answer: A

9) The classical and alternative pathways meet at complement component Select one

- a) C4
- b) C4b
- . c) Factor D
- d) C5
- e) C3

Answer: E

10) The major role of the complement system is to work in conjunction with Select one

- a) antibodies to lyse cells via the C8 and C9 components
- b) the major histocompatibility complex for cell recognition
- c) antibodies to opsonize cells
- d) the T-cell receptor for production of lymphokines
- e) antibodies to lyse cells via the perforin molecules

Answer: A

11) A complement component which is strongly chemotactic for neutrophils is Select one

- a) C9
- b) C5a
- c) C3
- d) C3b
- e) C5

Answer: B

12) The subclass of IgG that has lowest serum concentration is Select one:

- a) IgG1
- b) IgG2
- c) IgG3
- d) IgG4
- e) IgG5

Answer: D

13) One function of the complements is to Select one:

- a) inactivate perforins
- b) mediate the release of histamine
- c) neutralize bacteria and phagocytize antigens
- e) cross link allergens

Answer: B

14) Which of the following antibodies does not have a hinge region?

- A) IgG
- B) IgD
- C) IgM + IgE
- D) IgA
- E) IgE only

answer: c

15) Which of the following is not an opsonin?

- A) C2a
- B) C5b
- C) C3b
- D) C2b
- E) C4b

:Answer

16) Which one causes more complement activation:

- A) IgG1
- B) IgA
- C) IgG3
- D) IgM

Answer: D

17) Which one of these complement proteins causes chemotaxis?

- a) C5b
- b) C7
- c) C3a
- d) C9

Answer: C

18) What is correct about C3b?

- a) Causes cell lysis
- B) Opsonization of antigen
- C) triggers immunization
- d) Induces chemotaxis

Answer: B

19) Which one of these options creates C5 convertase?

- A) C3bBb
- B) C4b2a
- C) C2b4b3b
- D) C4b2a3b

Answer: D

20) All the following opsonin except?

- A. C3a
- B. C3b
- C. C5b

Answer: A

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Lecture 7

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Name _____

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The CD4 protein of T helper cells binds and stabilize the MHC class II/ peptide structure. The subunit that interacts with CD4 cell surface protein is Select one:

- a) alpha 1 and beta 1 subunit
- b) alpha 2 and beta 2 subunit
- c) alpha 1 and alpha 2 subunit
- d) beta 2 subunit
- e) beta 1 subunit

Answer: A

Which of the following is NOT true when comparing innate and adaptive immunity? Select one:

- a) Innate responds early and adaptive responds later on
- b) Innate has few pathogens (non-self) recognition mechanisms and adaptive has many
- c) Innate has immunologic memory and adaptive does not
- d) Innate does not show response improvements over time and adaptive does
- e) Innate response is non-specific and adaptive is very specific

Answer: C

Regarding processed antigen entered the endoplasmic reticulum and bind MHC, all are true except Select one:

- a) the antigen is endogenous antigen
- b) the antigen is viral antigen
- c) it binds just MHC1
- d) can bind MHC2 and MHC1
- e) needs peptide transporter to enter endoplasmic reticulum

Answer: D

MHC2 contain all of the following EXCEPT :

- a) Alpha 1
- b) .Alpha2
- c) Alpha 3
- d) Beta1
- e) Beta2

Answer:c

MHC1 contain all of the following EXCEPT :

- a) Alpha 1
- b) .Alpha2
- c) Alpha 3
- d) Beta1
- e) Beta2

Answer: D

Viral proteins that are formed inside of an infected cell associate with cell and are presented at the surface of the effected Select one:

- a) Cytokines
- b) MHC class I 'molecules
- c) MHC class II molecules
- d) Antibody molecules
- e) complement

Answer: B

One principal function of the Class I and Class II major histocompatibility complex proteins is to Select one:

- A) transduce the signal to the T-cell interior following antigen binding
- b) mediate immunoglobulin class switching
- c) present antigen for recognition by the T-cell antigen receptor
- d) stimulate production of interleukins
- e) bind complement C3d,

Answer: C



Immunology

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Lecture 8

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1)The paracortical area of lymph node comprises mainly:

Select one:

- a) Follicular dendritic cells
- b) Plasma cells
- c) Neutrophils
- d) B-cells
- e) T-cells

Answer: e

2)Which of the following bind antigen at the same time when TCR bind

Select one:

- a) LFA-1
- b) CD28
- c) CD32
- d) CD4
- e) CD3

Answer: d

3)The main costimulatory molecule for activation on T-cell is provided by:

Select one:

- a) CD28
- b) Surface Ig
- c) B7
- d) VLA-4
- e) IL-2

Answer: a

4) CTLA-4 receptor is

Select one:

- a) inhibitory receptor on naïve T cells
- b) Inhibitory receptor on active T cells
- c) Binds CD28 on APC
- d) Inhibitory receptor on macrophages
- e) Expressed on naïve T cells

Answer: b

5) one of the followings binds MHC at the same time with T cell?

- a) CD40
- b) CD28
- c) CTLA-4
- d) IG- alpha
- e) Cd2

Answer: b

6): least abundant immunoglobulin in the adult serum

- A) IgM
- B) IgG
- C) IgA
- D) IgD
- E) IgE

Answer: e

7) :MHC1 contain all of the following EXCEPT :

- a) Alpha 1
- b) .Alpha2
- c) Alpha 3
- d) Beta1
- e) Beta2

Answer: c

8) When a resting naïve T-cell engages its specific MHC/peptide complex displayed on the surface of a DC It firstly Select one

- a) Undergoes blast cell formation
- b) Produces IL-2
- c) undergoes cell death
- d) differentiates into effector cells
- e) Secretes IL-1

Answer: a

9). All of the following are expressed on B cells except:

- A) CD19
- B) CD20
- C) CD21
- D) CD40L

Answer: d

10). What type of cell contains CD45RO+?

- A) Memory T cell
- B) plasma cell

Answer: a

11). What transfers naive cells to secondary lymph nodes?

- A) Lymphatic vessels
- B) Blood vessels
- C) Venules from HEV
- D) Efferent lymphatics

Answer: c