بسم الله الرحمن الرحيم

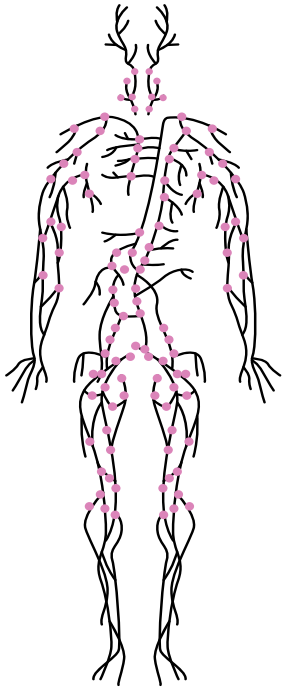
DOPAMINE SCIENTIFIC TEAM

IMMUNOLOGY

﴿ وَقُل رَّبِّ أَدْخِلْنِي مُدْخَلَ صِدْقٍ وَأَخْرِجْنِي مُخْرَجَ صِدْقٍ وَاجْعَل لِّي مِن لَّدُنكَ سُلْطَانًا نَّصِيرًا ﴾

Final

Past Papers



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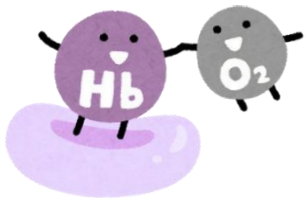

Autoimmunity

1) The deficiency of the complement proteins (C1q, C1q, C1s) or the complement receptors lead to the accumulation of immune complexes resulting in SLE or vasculitis. The deficiency affects the following complement pathway:

A) Alternative pathway

B) Classical pathway

C) Lectin binding pathway D) None of the above

Answer: B

2)B specific T cell attacking pancreas?

A. Graves’ disease

B. Type-1 diabetes

C. Type-2 diabetes

D. Systemic lupus erythematosus

E. Vitiligo

Answer:B

اللهم صل على سيدنا محمد

3) Which of the following is true about SLE ?

Answer : involvment of adaptive and innate immune system

4) Which of the following is correct about SLE?

A. No genetic predisposition

B. Only affects skin and respiratory system

C. Could be associated with classical pathway deficiency

Answer :C

5) Immunopathy in diabetes mellitus type 1 is characterized by:

Answer: Defective negative selection of T cells that are specific for pancreatic beta cells

B cell activation

6) A hapten Is…? .

A . An epitope .

B . A paratope .

C . A small chemical grouping which reacts with preformed antibodies

D . A carrier .

E . An immunogen.

Answer:C

7) Which of the following best describes a Hapten?

A) Large in size and can induce an immune response alone

B) Large in size and needs to be coupled to induce an immune response

C) Small in size and can induce an immune response alone

D) Small in size and needs to be couple to induce an immune response

E) None of the above

Answer:D

8) The site where the production of memory B-cell occurs:

Answer: Germinal centers

9) On of the characteristics of the second response:

Answer: Secretes more antibodies

10) Wrong about antigen interaction with lymphocytes:

A) Soluble antigens recognized by B lymphocytes

B) Soluble antigens on macrophages are recognized by T cells

C) soluble antigens are recognized by T cells

Answer:C

11) A person develops a viral infection and both T and B cells become activated to fight the infection. In which way is antigen recognition by B cells different from antigen recognition by T cells?

A) B cells home to the paracortex of lymph nodes where they recognize the antigens trapped by helper T cells

B) B cells recognize the antigens that have been processed and presented by follicular dendritic cells

C) B cells undergo receptor editing to change receptors that fail to bind to an antigen

D) B cells utilize membrane immunoglobulin molecules to bind to antigen in its natural state

E) The antigen receptors on a single B cell have a broad specificity, and are able to recognize several chemically unrelated antigens

Answer:D

12) The viral infection in the above question began in the respiratory tract. Which antibody class would best protect respiratory epithelial cells from viral infection?

A) IgA

B) IgD

C) IgE

D) IgG

E) IgM

Answer:A

اللهم صل على نبينا محمد

13) The person in the above question is experiencing a primary infection with the virus. B cells activated in a primary infection secrete which class of antibody first?

A) IgA

B) IgD

C) IgE

D) IgG

E) IgM

Answer:E

استغفر الله العظيم واتوب اليه

14) The virus in the above question spreads from the respiratory tract and causes viremia. Which antibody class would be most important in fighting the virus as it spreads through the body?

A) IgA

B) IgD

C) IgE

D) IgG

E) IgM

Answer:D

15) Which of the following is found in germinal centers:

Answer: Memory B cell formation

سبحان الله وبحمده ،سبحان الله العظيم

16) Antibodies in our body are produced by:

A) B-lymphocytes

B) T-lymphocytes

C) Monocytes

D) RBC’s

Answer:A

17) Plasma cells are the end cells of

A) T-cells

B) B-cells

C) Killer cells

D) NL

Answer:B

18) Dendritic cells, macrophages, and what other cell types are considered "professional antigen presenting cells," capable of antigen presentation to T helper cells?

A) B cells

B) Basophils

C) Eosinophils

D) Mast cells

E) Neutrophils

Answer:A

استغفر الله العظيم

19) Which of the following happens to a B cell after its interaction with the ligand?

A. increase in the RNA and ribosomes

B. decrease cell size

Answer:A

20) Which receptor transmits inhibitory signals to B cells?

Answer: FcγrIIb

21) Which of the following isotypes of antibodies activate the complement cascade if bound to antigen?

A. IgA and IgD

B. IgA and IgE

C. IgA and IgM

D. IgE and IgG

E. IgM and IgG

Answer:E

22) Neonate immunity is mainly by:

A) IgM

B) IgA

C) IgG

D) IgE

E) IgD

Answer:C

اللهم صلِ على سيدنا محمد

23) What cells have IgM & IgD receptors on their surface:

A. Mature T cells

B. Mature naïve B cells

C. Immature B cells

D. Neutrophils

E. Immature T cells

Answer:B

vaccines

24) Edward jennar vaccinated against smallpox using…?

A.Killed smallpox virus

B.A recombinant protein derived from smallpox

C An unrelated virus

D.Toxoid

E.CowpoX

Answer: E

سبحان الله وبحمده ،سبحان الله العظيم

25) A child is scratched by a bat. Because of the risk of rabies, the child is immediately given human rabies immune globulin. This is an example of which of the following?

a. passive immunization.

b. active immunization.

c. adaptive immunity.

d. innate immunity

Answer: A

اللهم صلِ على سيدنا محمد

26) The currently available vaccine to prevent hepatitis A infection is…?

a. Subunit vaccine

b. Toxoid vaccine

c. Inactivated vaccine

d. Live-attenuated vaccine

e. mRNA vaccine

Answer:C

27) When a human pathogen is repeatedly grown and passaged in cells of a different species and then used for vaccination purposes, the resulting vaccine is referred to as a/an…?

a. Non-live vaccine

b. Subunit vaccine

c. Nucleic acid based vaccine

d. Toxoid vaccine

e. Live attenuated vaccine

Answer :E

28) Which of the following vaccines should not be administered to severely immunocompromised patients…?

a. Influenza Vaccine

b. Pneumococcal Vaccine

c. Measles-Mumps-Rubella (MMR) Vaccine

d. Hepatitis B Vaccine

e. Meningococcal Vaccine

Answer:C

29)19-year-old college student develops a rash. She works part-time in a pediatric AIDS clinic. Her blood is drawn and tested for specific antibody to the chicken pox virus (varicella-zoster). Which of the following antibody classes would you expect to find if she is immune to chicken pox?

A) IgG

B) IgA

C) IgM

D) IgD

E) IgE

Answer :A

Not mentioned in the vaccine lecture but feels like an imp concept (:

استغفر الله العظيم

30) Passing a human pathogen several times in cells culture in vitro to create a weaker or less virulent pathogen is the method used in creating:

A. Viral vector vaccines

B. Toxoid vaccine

C. Live attenuated vaccines

D. Nucleic acid vaccines

E. Inactivated vaccine

Answer:C

31) which of the following vaccines doesn't provide herd immunity ?

A. Oral polio vaccine (OPV)

B. (BCG) vaccine

C. tetanus vaccine

D. Hepatitis A vaccines.

E. Whole-cell pertussis

Answer : C

Explanation: "toxoids protect only against disease pathogenesis in vaccinated individuals but do not prevent infection or transmission. "

32)Which vaccine cannot be given to the immunocompromised patients?

Answer: Live attenuated vaccine.

Transplantation

33) Transplantation of which of the following causes GVHD (Graft vs host disease)…

ANS: Hematopoietic stem cells (Bone Marrow)

34) Hyperacute graft rejection is caused by?

.A Preformed antibody

.B CD4 lymphocytes

.C CD8 lymphocytes

.D Platelets

.E Circulating immune complexes

Answer:A

35) A graft between members of the same species is termed an?

.A Autograft

.B Isograft

.C Xenograft

.D Allograft

.E None of the above

Answer:D

36) Graft vs host disease often accompanies transplantation of?

.A Cartilage

.B Kidney

.C Bone marrow

.D Heart

Answer:C

37) A Kidney transplant that has been rejected within minutes, choose the wrong statement:

A) this type of rejection is called hyperacute rejection

B) Complement system activation plays a role here

C) antigen presenting cells of the donor plays a role here

D) preformed Antibodies in the recipient attack transplanted organ

E) blood clots are formed which prevents blood supply from reaching the graft

Answer:C

38) True about GVHD:

A) common after kidney transplant

B) Doesn’t occur in identical twins

C) Female Donor to male increases the risk because MHC1 are on Y chromosome

D) CD4 and CD8 of the recipient initiate the disease

Answer :B

استغفر الله العظيم

39) Which of the following isn’t true about Allograft rejection?

A) Lymphocytes of the recipient recognize DAMPs of the allograft as non self

B) Activate T cells of the recipient by donor non self-antigens

C) Activate T cells of the recipient by donor’s self- antigens presented of recipient APC

Answer: A

40) Wrong about MHC molecules :

A) Variable between population

B) Variability causes different susceptibility to diseases between population

C) cross presentation presents antigen on MHC II

Answer C

Cross-presentation was mentioned very briefly in Tumor immunology lecture 1, slide number 8 in the figure's description. (CD8+ T cell responses to tumors may be induced by cross-priming (cross-presentation))

41) graft vs host tissue occurs in which case ?

Answer: hematopoietic stem cell

42) renal transplant rejection after 2 months due to

Answer : Direct killing by CTLs

43) A patient who had a kidney transplantation 6 years ago suddenly has shown a high serum creatinine and fluid retention. This graft rejection occurs due to:

A. Activation of T helper that was transmitted with the graft

B. Direct killing by donor T cytotoxic from

C. Prolonged usage of immunosuppressive drugs

D. Chronic inflammation with vessel occlusions

E. Preexisting antibodies against the graft (before transplantation)

Answer: D

Immune defeciencies

44) SCID (severe combined immunodeficiencies) are linked to defects in the activation or lack of which of the following:

A. B cells

B. T cells

C. Mast cells

D. Macrophage

Answer: B

“In many SCID syndromes, impaired humoral immunity is largely a consequence of loss of helper T cell function..
Impaired T cell → impaired B cells ?”

45) SCID is a problem associated with?

ANS: T Cells

اللهم صلِ على سيدنا محمد

46) Di George syndrome results from a defect in? .

A Purine nucleoside phosphorylase .

B WASP ‘

.C Thymic development .

D DNA repair

.E CD3

Answer: C

47) Deletions in the T-cell CD154 (CD40L) gene produce? .

A The hyper–IgM syndrome

.B Congenital X-linked agammaglobulinemia

.C IgA deficiency

.D Wiskott–Aldrich Syndrome

.E Deficiency in cytotoxic T-cell activity

Answer:A

48)-Primary immunodeficiency producing susceptibility to infection by viruses and molds is due to?

.A B-cell deficiency .

B T-cell deficiency

.C Phagocyte deficiency

.D Complement deficiency

.E Eosinophil deficiency.

Answer:B

Not mentioned directly

استغفر الله العظيم

49) A patient suffering from recurrent mucosal infections and celiac disease. Turns out he is affected with a primary immunodeficiency. He is most probably affected with…?

a. Hyper- IgM Syndrome

b. IgA deficiency

c. DiGeorge Syndrome

d. Common variable immunodeficiency (CVID)

e. Wiskott-Aldrich syndrome

Answer:B

50) Defects in Macrophage to kill bacteria that syenthesis Catalase ;this called ?

A. Chronic granulomatous disease

.B Chediak-Higashi disease

.C Leukocyte adhesion deficiency

.D Hashimoto's disease

.E Streptococcal infection

Answer: A

51)The deficiency of the complement component factor D and properdin lead to the recurrent bacterial infection. Which of the following pathway is affected in this condition?

A) Alternative pathway

B) Classical pathway

C) Lectin binding pathway

D) None of the above

Answer:A

سبحان الله وبحمده ،سبحان الله العظيم

52) A workup on an ill child revealed low levels of complement C3 in her blood. Which one of the following presentations did this child most likely manifest?

A) Chronic eczema

B) Immune hemolytic anemia

C) Incomplete recovery from viral infections

D) Poor response to vaccination

E) Recurrent infections with extracellular bacteria

Answer:E

53) One Of the following in not a symptom of DiGeorge’s Syndrome:

A. Cardiac abnormalities

B. Abnormal facies

C. Cleft palate

D. Hypoglycaemia

E. All of the above are symptoms

Answer: D

54) Severe combined immunodeficiency is most likely to be associated with defect in:

A. T cells

B. B cells

C. Complement proteins

D. Neutrophils

E. Macrophages

Answer :A

55) The most common immunoglobulin deficiency is:

A. IgG deficiency

B. IgA deficiency

C. IgD deficiency

D. IgM deficiency

E. IgE deficiency

Answer :B

56)Which of the following is wrong about secondary immune deficiency ?

A. zinc deficiency result secondary immune deficiency

B. protein malnutrition most common of secondary immune deficiency

C. diabetes result in secondary immune deficiency

D. Affects with genetic mutations

Answer :D

57) Which of the following is correct about primary immunodeficiency?

Answer: Caused by a genetic factor.

Cancer immunology

Dr. Anas + Dr.Bilal

Almost done (:

58) A mechanism by which tumor cells evade the immune system:

Answer: Recruiting regulatory T cells to the tumor site

59) Which of the following mechanisms contribute to immune evasion by tumors?

A. Upregulation of MHC class 1 expression.
B. Enhance the antigen presentation.
C. Activation of cytotoxic T cell activity.
D. Expression of checkpoint molecules.
E. Stimulation by releasing pro-inflammatory cytokines.

Answer:D

60)How is checkpoint blockade used in cancer immunotherapy?

A. Activation of regulatory t cells

B. Promoting angiogenesis to the cancer

C. Preventing inhibitory signals, thereby activating T cells

Answer:C

61)Extracting T cells from patients and engineering them to react to cancer cells then injection them back into the patient is a type of cancer immunotherapy referred to as:

A. Adoptive cell transfer

B. Cancer vaccination

C. Immune checkpoint blockade

D. Nonspecific immune stimulation

E. Oncolytic virus immunotherapy

Answer:A

62) BCG is used to protect against

A.Tuberculosis

B. Rabies

C. Hepatitis B

D. Influenza

E. Pertussis

Answe:A

Lymphocyte Development, Immunological Tolerance, and Autoimmunity

Dr .Nader material

63) During antigen recognition, inactivated t cells due to the absence of co-stimulation go through:

A. Anergy

B. Apoptosis

C. Activation

D. Differentiation

Answer:A

64) IgD & IgM are found in …

A. immature B cells

B. naïve mature B cells

C. precursor B cells

D. mature T cells

E. immature T cells

Answer:B

65) which of the following is true about BCR ?

A. The variable regions are responsible for effector functions.

B. Only recognizes linear peptides that have no conformation

C. it can’t be in the soluble form

D. its signaling functions are mediated by CD3 proteins

E. recombination occurs in both heavy and light chains

Answer:E

66) Which of the following regarding the process of the B cell receptor BCR gene rearrangement is correct?

A. Gene rearrangement takes place in mature B cells only

B. Light and heavy chains both contain diversity, variable, and joining regions (VDJ)

C. The gene rearrangement of the light chain happens first

D. VDJ recombination occurs after encountering the antigen by the B cells for the first time

E. Gene rearrangement occurs in gene for both light and heavy chains

Answer:E

67) Antigen receptors on T and B cells share which similar feature?

A) Affinity maturation occurs following antigen recognition for both receptor types

B) Interaction with MHC molecules is required for antigen recognition by both receptor types

C) The constant regions of both receptor types are identical

D) The specificity of both receptor types is determined following exposure of mature cells to antigen

E) The variable portions of both receptor types are generated by random recombination of genes

Answer:E

68) The adaptive immune system develops from stem cells originating in the:

A) Fetal thymus

B) Fetal liver and bone marrow

C) Placenta

D) Germinal centers of the spleen

Answer :B
The statement was not directly mentioned,but it is good to know about it

69) B and T cells are produced by stem cells that are in:

A) Bone marrow

B) The liver

C) The circulatory system

D) The spleen

E) The lymph nodes

Answer: A

70) The first immunoglobulin heavy chain class to be expressed on the surface of a newly produced B-cell is...?

A. IgA

B. IgD

C. IgE

D. IgG

E. IgM

Answer : E

71) Which of the following isotypes of antibodies activate the complement cascade if bound to antigen?

A. IgA and IgD

B. IgA and IgE

C. IgA and IgM

D. IgE and IgG

E. IgM and IgG

Answer:E

72) Somatic hypermutation in the Immunoglobulin (lg) variable region occurs…?

a. During the mitosis and differentiation of hematopoietic stem cells only

b. In the gametes (eggs and sperms) before fertilization

c. During the mitosis and differentiation of all the bone marrow cells

d. During the meiosis and differentiation of all the bone marrow cells

e. During the meiosis and differentiation of hematopoietic stem cells

Answer:C

Correct answer should be listed as ‘SHM occurs during mitosis of antigen-stimulated B cells’ but if have to pick then C

73) An epitope…?

A.Is the area on an antigen which contacts antibody

B.Is the area on an antibody which contacts antigen

C.Requires both antigen-binding arms of the antibody molecule for its recognition

D.Is usually composed of a linear sequence of amino acids

E.Is usually associated with a concave region of the immunoglobulin

Answer:A

73) Mature naive B cells…?

A.Central lymphoid tissues

B.cells express both IgM and IgD at their surface

C.with nonproductive b-chain VDJ rearrangement can be rescued by further rearrangement

D.produced by SC is required for development of B lineage cells

Answer:B

73) Which receptor is encoded by somatic DNA recombination:

A) T-cell Receptor

B) CD20

C) B-cell Receptor

D) A+C

Answer:D

74) Which of the following Antibodies occurs as a pentameric structure?

A) IgM

B) IgG

C) IgA

D) IgE

E) A+C

Answer:A

75) CD4 in secondary lymphoid organs that has not been exposed to its antigen yet is called?

A) Naïve immature T helper cell

B) Naïve mature T cytotoxic

C) Naïve Mature T helper cell

D) Activated Mature T helper cell

Answer:C

76) Neonate immunity is mainly by:

A) IgM

B) IgA

C) IgG

D) IgE

E) IgD

Answer:C

77) The interaction of which molecule on the membrane of cells with its ligand signals apoptosis?

A) B7 (CD80/86)

B) CD40

C) CTLA-4 (CD152)

D) Fas (CD95)

E) Fc receptor (CD16)

Answer: D

78) Which receptor is encoded by somatic DNA recombination:

A. RIG like receptor

B. B cell receptor

C. NOG like receptor

D. Toll like receptor

E. Pattern recognition receptor

Answer:B

79) Positive selection of thymocytes in the thymus occurs when they express the functional critical receptor:

A. CD28

B. MHC I

C. MHC II

D. TCR

E. Fc receptor

Answer:D

80) Which of the following molecules triggers the caspase cascade and through which cells?

A) perforins/granzymes through CD8 cells

B) isozymes through CD4 cells

C) isozymes through CD8 cells

D) perforins/granzymes through CD4 cells

Answer:A
It was not mentioned in the slides ,but u can easily know it

81) Which factor is needed for the survival and functioning of regulatory T cells?

A. INF

B. TNF

C. IL-2

D. IL-10

E. CD38

Answer:C

82) Which of the following antibodies is the most abundant in the mucosa?

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

Answer:B

83) A CD3(+) cell that secretes perforin and granzyme is a:

A) (γδ) T cell

B) Helper T cell

C) Cytotoxic T cell

D) Regulatory T cell

E) Natural killer cell

Answer:C

84) A cell expressing CD3, CD25, is a:

A) (γδ) T cell

B) Helper T cell

C) Cytotoxic T cell

D) Regulatory T cell

E) Natural killer cell

Answer:D

85) When a T cell is cultured with an antigen-presenting cell (APC), which molecule’s increased expression would suppress T cell activation?

A. CTLA-4

B. IL-2 receptor

C. IL-2

D. b7-1

Answer:A

86) blocking of CTLA-4 will result in the enhancement of which reaction ?

Answer --B7 & CD28

87) IL-2 is secreted from:

A. Activated tissue resident macrophages

B. Naive B cells

C. Activated CD4+ T cells

D. Mature dendritic cells

E. Naive T cells

Answer:C

88) An anti-inflammatory cytokine is:

A) INF-γ

B) IL-4

C) IL-6

D) IL-10

E) IL-17

Answer:D

89) Which of the following has hyper gene recombination for its receptors during maturation

A) Alpha-beta T lymphocytes

B) Gamma-delta T lymphocytes

C) Macrophages

D) Mast cells

Answer:A

90) Highly specific antibodies that react ONLY with the antigen that caused

their production

A) heterophile antibodies

B) cellular component

C) monoclonal antibodies

D) natural killer cells

Answer:C

91) The recombination activating genes (RAGs) encode parts of a protein complex that plays important roles in:

A. Activating complement proteins

B. Maturation of neutrophils

C. Assembling MHC peptide complex

D. Initiation of V(D)J recombination

Answer:D

92) Which of the following is function of RAG enzymes ?

A. initiate repair by forming hairpin loop

B. add in Nucleotides into the separated variable and joining segments

C. Initiate V(d)j recombination

D. open the hairpin loop

Answer:C

93)The difference between tolerance and immunity depends upon the maturation status of the antigen presenting dendritic cells. What is the T-cell outcome of an antigen presentation event by a mature dendritic cell?

A) Anergy

B) Apoptosis

C) Activation

D) Ignorance

E) Suppression

Answe:C

94) Exclusively on B cells cluster differentiation:

A) CD19

B) CD25

C) Notch

Answer:A

Immunopharmacology Lecture

95) Treatment with steroids downregulates all of the following except:

Answer: Lipocortin

96) Which of the following statement is correct?

A. Increasing the expression of IL-2 decreases the chances of autoimmune diseases
B. Giving anti TGF alpha increases the immunity of the patient
C. Increasing lipocortin expression by glucocorticoids results in an anti-inflammatory effect
D. Glucocorticoids enhances the immune system
E. Blocking the interleukin 2 receptor results in cytokine storm

Answer:C

97) What is the most effective strategy to treat allergic rhinitis?

A. NSAID
B. Strong steroid
C. Must detect culprit then choose approach
D. Epinephrine

Answer:C

98) One of the following worsen congestive heart failure:

A. Cyclosporine
B. Rituximab
C. Omalizmab
D. Nivolumab E
E. Infliximab

Answer:E

99) Which drug is associated with high risk of DM?

A. Tacrolimus
B. Cyclosporin
C. Sirolimus

Answer:A

100) Prolong use of which of the following agents increased risk of lymphoma

A. Cyclosporine
B. Rituximab
C. Omalizunab
D. Nivolumab
E. Infliximab

Answer:A

101) Comparing cyclosporine with tacrolimus:

Answer: Tacrolimus is superior to cyclosporine in reducing the kidney transplantation rejection

102) How is checkpoint blockade used in cancer immunotherapy?

A. Activation of regulatory t cells
B. Promoting angiogenesis to the cancer
C. Preventing inhibitory signals, thereby activating T cells

Answer:C

103) Which of the following mechanisms contribute to immune evasion by tumors?

A. Upregulation of MHC class 1 expression.
B. Enhance the antigen presentation.
C. Activation of cytotoxic T cell activity.
D. Expression of checkpoint molecules.
E. Stimulation by releasing pro-inflammatory cytokines.

Answer:D

External Resources

رسالة من الفريق العلمي

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أنت أهل الوفاء والحق، فاغفر له و لموتى المسلمين وارحمهم إنك أنت الغفور الرحيم

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Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1	14	C	D
V1 → V2	23 42 45 104	‘Antibody’ Answer was missed D	‘Receptor’ Answer:C Explanation of the answer A