

I

1.ER single sequence is guided to the ER by which of the two components?

1:signal recognition particles

2:srp receptor

2.write the name of antibody that appear on the surface of developing B cell?

igD and igM antibody

3.what is the role of regulatory region explain its two elements.

Regulatory sequence controls when expression occurs for the multiple protein coding regions (red). Promoter, operator and enhancer regions (yellow) regulate the transcription of the gene into

4.Describe the two signaling functions of N-terminal ER signal sequence of a soluble protein

The N-terminal ER signal sequence of a soluble protein has **two signaling functions**

1) It directs the protein to the ER membrane 2) It serves as a start-transfer signal (or start-transfer peptide) that opens the pore.

6. MHC I MHC II difference

MHC I	MHC II
Present on the surface of all nucleated cells	Present on the surface of antigen presenting cells such as macrophages, B cells, dendritic

	cells etc.
Class I is a single chain (alpha chain) bound to an invariant partner	class II is a heterodimer containing two roughly identical chains (alpha and beta chains)
Class I present 8-10 amino acid peptides	class II presents 14-18 amino acid Peptides
Mainly interact with cytotoxic T cells	Mainly interact with helper T cells
Encoded by HLA-A, HLA-B and HLA-C genes	Encoded by HLA-D gene
Bind endogenous antigens synthesized in a cell	Binds exogenous antigens
Presence of foreign or over-abundant antigens targets cell for destruction	Presence of foreign antigens induces antibody production, and attracts immune cells to area of infection

cell cycle?10

The cell cycle or cell-division cycle is the series of events that take place in a cell leading to its division and duplication of its DNA (DNA replication) to produce two daughter cells. In bacteria, which lack a cell nucleus, the cell cycle is divided into the B, C, and D periods. The B period extends from the end of cell division to the beginning of DNA replication. DNA replication occurs during the C period. The D period refers to the stage between the end of DNA replication and the splitting of the bacterial cell into two daughter cells.[2] In cells with a nucleus, as in eukaryotes, the cell cycle is also divided into three periods: interphase, the mitotic (M) phase, and cytokinesis. During interphase, the cell grows, accumulating nutrients needed for mitosis, preparing it for cell division and duplicating its DNA. During the mitotic phase, the chromosomes separate. During the final stage, cytokinesis, the chromosomes and cytoplasm separate into two new daughter cells. To ensure the proper division of the cell, there are control mechanisms known as cell cycle checkpoints.

The cell-division cycle is a vital process by which a single-celled fertilized egg develops into a mature organism, as well as the process by which hair, skin, blood cells, and some internal organs are renewed. After cell division, each of the daughter cells begin the interphase of a new cycle. Although the various stages of interphase are not usually morphologically distinguishable, each phase of the cell cycle has a distinct set of specialized biochemical processes that prepare the cell for initiation of cell divisions.

prophase,

metaphase,

anaphase,

telophase

, antibodies names ?5

IgA, IgD, IgE, IgG, IgM

, Stem cells why they are different from specialized cells ?

stem cells are basically unspecialized... so when we want to differentiate them into desired types of cells so then they become specialized

How UV helps in sterilization of equipment? 3

ultra violet .. rays sterilized such equipments that cannot be sterilized in autoclave.e.g plastic petri dishes

bio201 mcqs;

1.inhibitors that binds to the active side of enzymes are.....

2.inhibitors that bind to the non active side of enzymes are.....

3. dna aur rna ma pyrimidine aur purine bases batani ha.

4.carbon ma bond..... a.2 b.4 c.6

5. phosphate and non phosphat group.....

what is stem cell and its benefits and therputic uses.?

an undifferentiated cell of a multicellular organism which is capable of giving rise to indefinitely more cells of the same type, and from which certain other kinds of cell arise by differentiation.

benefits

The hope going forward is that stem cells can also be used as a “renewable source of replacement cells and tissues” to treat common and serious diseases without the need for organ transplants or surgeries, including: macular degeneration, spinal cord injury, stroke, burns, heart disease, diabetes, osteoarthritis, ...

uses

Stem-cell therapy is the use of stem cells to treat or prevent a disease or condition. Bone marrow transplant is the most widely used stem-cell therapy, but some therapies derived from umbilical cord blood are also in use.

three steps of RNA processing?

Pre-mRNA Processing. The eukaryotic pre-mRNA undergoes extensive processing before it is ready to be translated. ...

5' Capping. ...

3' Poly-A Tail. ...

Pre-mRNA Splicing. ...

Discovery of Introns. ...

Intron Processing.

GTF-beta receptors describe mechanism..?10 mrks

mechanism of the olfaction receptors..?

It can detect thousands of different odor molecules through a large family of olfactory receptors (ORs), of a diverse protein sequence, which are located in olfactory sensory neurons (OSNs) in the olfactory epithelium in the nose of humans, and in the vomeronasal organ in animals.

Odorant molecule pass through the nasal cavity .

1:binding of odorant to its receptor activates G protein

2:the activation of G protein activates the synthesis of cAMP by adenylyl cyclase.

3:cAMP activates the opening site of ion channel

4:change in the ion concentration inside the cell send a signal to a specific area of the brain perceives the signal as a scent .

Elaborate the mechanism of growth promoting mechanism of oncogenes. 10 marks

Autonomous Cell Growth In Cancer Cells Is Promoted By Following Elements

- a) Growth Factors
- b) Growth Factor Receptors
- c) Signal-Transducing Proteins (secondary messengers)
- d) Nuclear Transcription Factors
- e) Cyclins and Cyclin Dependent Kinases (CDKs)

3. How G protein involved in formation of GDP? 2 marks

Rhodopsin absorbs the light causing the G protein transduction to exchange GTP for GDP.

5. How sheep is cloned by the nuclear material. Explain it by all steps. 5 marks

Nuclear transfer is a form of cloning. The steps involve removing the DNA from an oocyte (unfertilised egg), and injecting the nucleus which contains the DNA to be cloned. In rare instances, the newly constructed cell will divide normally, replicating the new DNA while remaining in a pluripotent state. If the cloned cells are placed in the uterus of a female mammal, a cloned organism develops to term in rare instances. This is how Dolly the Sheep and many other species were cloned. Cows are commonly cloned to select those that have the best milk production.

Despite this, the low efficiency of the technique has prompted some researchers, notably Ian Wilmut, creator of Dolly the cloned sheep, to abandon it.[1]

7. Write synapse and its steps involved in the mechanism. 5 marks

a junction between two nerve cells, consisting of a minute gap across which impulses pass by diffusion of a neurotransmitter.

steps :

There are two general classes of neurotransmitters: large neuropeptides or smaller amines/amino acids which are synthesized differently.

Step 1 – Neurotransmitter Synthesis. ...

Step 2 & 3- Neurotransmitter Packaging and Release. ...

Step 4 – Neurotransmitter Binding. ...

Step 5 – Stopping the Chemical Signal.

mechanism

Neurotransmitters, such as Acetylcholine, are stored in vesicles in the presynaptic terminal. Acetylcholine is secreted across synaptic clefts, where it binds to the post synaptic membrane and causes a change in the permeability of the postsynaptic cell, which results in an excitatory post-synaptic potential.

8. TGF- β Receptor Family . 3 marks

Transforming growth factor beta (TGF β) receptors are single pass serine/threonine kinase receptors. They exist in several different isoforms that can be homo- or heterodimeric.[1] The number of characterized ligands in the TGF β superfamily far exceeds the number of known receptors, suggesting the promiscuity that exists between the ligand and receptor interactions.