LAB 3: DRUG TARGETS

OBJECTIVES:

- To review basic cell biology/anatomy with respect to localization of potential drug targets
- To understand the necessity for cell-cell communication
- To understand how messages are detected and coordinated
- To list the major types of drug targets based on the main detection systems

OPEN THE DRUGTARGETS LINK AND CLICK ON THE INTRO PAGE TO START THE PROGRAMME

Click on the ***"intracellular signaling: the basis of drug targets"*** icon

Write NOTES as needed on "a rough guide to the cell" as follows:

NOTE: IF YOU HAVE COVERED BASIC CELL BIOLOGY IN PREVIOUS COURSES YOU CAN SKIP THE FIRST 4 SECTION.

1/ Cell functions:

Metabolizing nutrients

Synthesizing proteins

Replication

Function of cellular organelles:

Mitochondria

Cytoplasm

Golgi apparatus

Cell membrane

Nucleus

Vesicles

2/ Cell specialisation:

Nerves

Sperm

Phagocytes

Muscle cells

Endocrine cells

3/ Cell-cell coordination

4/ Variable cell responses

5/ Categories of intercellular messengers

Neurotransmitters. Draw the diagram of the neuromuscular junction and vesicular release of neurotransmitter (e.g…….)

Paracrine messengers. An example of a paracrine messenger is …….. which are produced in the ……. and act within the …….. to initiate……..

Endocrine messengers. These are often described as ……. and are widely circulated through the body via the……..

Example: ……. Is released by the …….. and acts on the ……..gland to regulate production of …… which in turns affects

……..

6/ Selectivity / recognition sites

7/ Sites in a cell where drugs may act

Plasma membrane

Mitochondria

Cytoplasm

Nucleus

8/ Types (localization) of drug targets

Plasma membrane. The four categories are:

a/

Ligand examples = ……

b/

Ligand examples = ……

c/

Ligand examples = ……

d/

Ligand examples = ……

Cytoplasmic targets

Nucleus

Perform the short MCQ test to check your knowledge of cellular localization of drug targets

This is a short lab so feel free to start lab 2 if you wish**.**