

Xenobiotics (Part 1)



**By Dr. Shashi Prabha
HOD , Zoology Dept.
Karim City College**

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Xenobiotics



- A xenobiotic is a foreign chemical substance found within an organism that is not normally naturally produced by or expected to be present within.
- It can also cover substances that are present in much higher concentrations than are usual.

The term xenobiotic is derived from the Greek words xenos i.e. foreigner, stranger and bios or vios i.e. life.

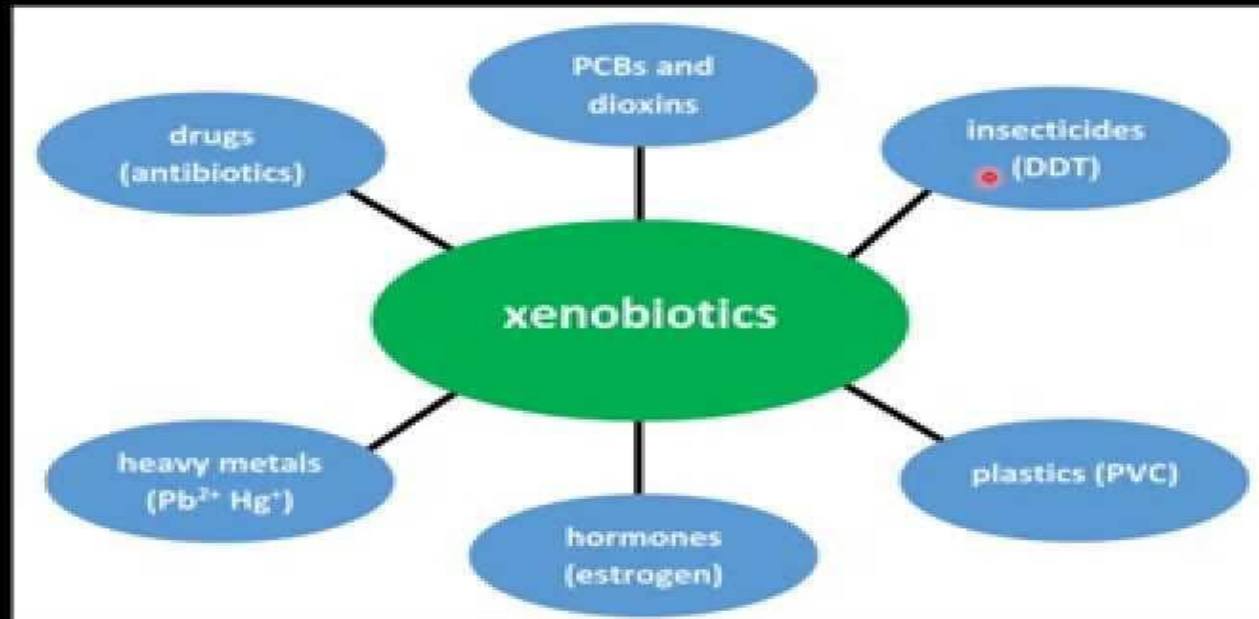
- They do not occur in nature thus they are foreign to the biosphere.

Xenobiotics



Xenobiotics

Xenobiotics are chemical substances found within an organism that are not naturally produced by or expected to be present within that organism.



Xenobiotics



- xenobiotics do not occur in the body
- they enter body mainly with food or as medications
- Chemical industry – produces synthetic compounds which do not occur in nature (plastics, pesticides, dyes, additives...)
- Pharmaceutical industry – produces substances of synthetic and natural (plant) origin – do not occur in the body .

Xenobiotics



Xenobiotics can be-

Exogenous- The foreign molecules which are not normally ingested or utilized by the organism but they gain entry through dietary food stuffs, or in the form of certain medicines/ drugs used for a therapeutic cause or are inhaled through environment .

Examples- Drugs, food additives, pollutants, insecticides, chemical carcinogens etc.

Xenobiotics



Xenobiotics can be-

Endogenous – Though they are not foreign substances but have effects similar to exogenous xenobiotics.

These are synthesized in the body or are produced as metabolites of various processes in the body.

Examples-Bilirubin, Bile acids, Steroids, Eicosanoids and certain fatty acids.

Xenobiotics



Important xenobiotics concerned to human health–

- Food additive
- Dyes
- Polymers
- Industrial waste
- Chlorinated drinking water
- Pesticides

Xenobiotics



Important xenobiotics concerned to human health **(contd...)**

- Detergents
- Explosives
- Automobile exhaust
- Pyrene
- Preservatives
- Quininess

Thank You

