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1. **RADIO ACTIVE TRACERS**

Radioactive tracers or radioactive label is a chemical compound in which one or more atoms have been replaced by a radionuclide so by virtue of its radioactive decay it can be used to explore the mechanism of chemical reactions by tracing the path that the radioisotope follows from reactants to products. Radio tracing is the radioactive form of isotopic labeling.

A radioactive tracer can also be used extensively to trace the path of biochemical reactions. Radioactive tracer can also be used to tack the distribution of a substance within a natural system such as a cell or tissue. They determine the location of fractures created by hydraulic fracturing in natural gas production. They form basis of a variety of imaging systems such as PET scans, SPECT scans etc.

1. **APPLICATION OF TRCER IN MEDICINE**

Radioactive isotopes are species of chemical elements that are produced through the natural decay of atoms. Exposure to radiation generally is considered harmful to the human body, but radioisotopes are highly valuable in medicine, particularly in the diagnosis and treatment of disease.

Nuclear medicine uses radioactive isotopes in variety of ways one of the more common uses is as a tracer in which a radioisotope, such as technetium-99 m, is taken rally or is injected or inhaled into the body.

Therapeutic applications of radioisotopes typically are intended to destroy the targeted cells. This is the basis of radio therapy, which is commonly used to treat cancer and abnormal tissue growth such as hyperthyroidism.