

Good example of report on radioisotopes in medicine

[Environment](#), [Disaster](#)



**ASSIGN
BUSTER**

\n[toc title="Table of Contents"]\n

\n \t

1. [Introduction about the Radioisotopes](#) \n \t
2. [Diagnostic Procedure](#) \n \t
3. [Bio Chemical Analysis](#) \n \t
4. [Diagnostic Radio Pharmaceuticals](#) \n \t
5. [Therapeutic Radio Phamaceuticals Analysis](#) \n \t
6. [Nuclear Medical Waste](#) \n \t
7. [Works Cited](#) \n

\n[/toc]\n \n

Introduction about the Radioisotopes

In this paper, a trainee is going to learn about the operation and handling of radioisotopes. Nuclear medicine is a branch of medicine using the radiation to analyze the function of the organs. This information is used by the physicians to have an accurate diagnosis. The radioisotopes are used to determine the affected organs in our body. The problems, like, thyroid, organs, bones, and many other organs can be easily imaged using this device. Over 10, 000 hospitals are currently using the radioisotopes in the medical field. The radioisotopes are the common isotopes used for diagnosis in technetium – 99. In the developed countries, the frequency of the medicine is 1. 9%. Nuclear medicine was developed in 1950's by the group of physicians. In X- ray tomography, the nuclear medicine can contribute about 36% of the total radiation.

Diagnostic Procedure

The diagnostic technique is being used in the nuclear medicine field. This technique always uses the radioactive tracers; this tracer emits the gamma rays within the body. This tracer is called as lived isotopes. These tracers are linked to the chemical components. This can provide an injection. In the first time, the single photons are being detected by the gamma rays. The camera is being used; it builds up an image to find the radiation emission. This image is enhanced by the computer, which is often used by the physicians. The development is made in the positron emission tomography (PET). This technique is a sophisticated technique using the isotopes.

The new procedures are combining with the PET; it is a computed X- Ray tomography to provide the co – registration of the two images. It is enabling about 30% better image than the gamma imaging camera. It is a powerful tool providing the unique solution about the diseases. The radiation will make a fundamental difference in the nuclear medicine imaging and other imaging technique, such as x- rays. The nuclear imaging has some good advantage over x- ray techniques in some tissue. This good process led to the common use in the developed countries. The central irradiation is being carried out using the gamma beam. The gamma knife is used in the radio surgery is being called as the x- ray procedure.

Bio Chemical Analysis

We can detect the presence and absence of radioactive materials in the low concentrations. This radioisotope is being used to label the molecules. These are called as the radio immune – assays.

Diagnostic Radio Pharmaceuticals

The every organ works differently from the chemical point of view. The doctors and chemists are using this to identify the number of chemicals that are observed by the specific organs. This diagnostic is being used to examine the blood flow. One of the important uses is to protect the effects of the surgery.

The amount of radiopharmaceutical in patients is just sufficient to obtain the required the required information. The radiation dose is medically insignificant. A radioisotope is used to diagnosis the emission of the gamma radiations of the sufficient energy. Mostly, it is decaying soon. The radioisotopes are widely used in the medicine. It is being employed 80% of all the nuclear procedures. This diagnosis is important for the patients to detect the radiation affected area. The overdose of chemicals can also be identified by this process.

Therapeutic Radio Phamaceuticals Analysis

This technique is used to destroy the malfunctioning of cells using the radiations. The radioisotopes generates the radiations, which is used to diagnosis the organs. The radiotherapy is less commonly used as the radioactive materials in the field of medicine. An ideal radio isotope is the beta emitter with the good gamma enabled imaging process. The use of the radiotherapy is becoming rare. The plutonium - 210 is the penultimate decay item; it is the outcome of the beta decay. This occurs be in nature. Dosing Plutonium will not affect the human tissue or health. The alpha radiations are

present in the vital organs, and it is sufficient to destroy them. This technique is much needed for analysis of the human body.

Nuclear Medical Waste

The use of the radio isotopes in the medical diagnosis and the treatments are called as the low level waste. This kind of waste in the industry is, paper, rags, etc. This is mostly short lived radioactive waste. The radiography sources are decayed in a point which has enough penetration in the treatments. They are considered as the radioactive wastes. The range from (0-60) is treated as a short- lived intermediate level waste.

This paper presents the trainee about the working, handling, and the operation of the radioisotopes in the medicine. This paper simply explains about the working and operation of the radioisotopes. This paper will act as a guide to the trainee for manufacturing the radioisotopes for medicine. This chemical needs some precaution on operations.

Works Cited

1. Radioisotopes in Medicine. (2013). Retrieved Mar 27, 2014, from <http://www.world-nuclear.org/info/non-power-nuclear-applications/radioisotopes/radioisotopes-in-medicine/>