

Dna



**ASSIGN
BUSTER**

Deoxyribonucleic acid (DNA) is a storage medium found in almost all organism. This hereditary material is composed of units referred to as nucleotides, distinguished by their respective chemical groups, or base, attached to them (Calladine, 2004). The DNA structure was enlightened for the first time in 1953 by the scientist Watson J. and Crick F. These researchers proposed that DNA is made up of two long strands with a chain links structure comparable to a ladder. There are four chain links; adenine, cytosine, guanine, and thymine, abbreviated as A, G, C, and T. DNA was discovered in 1869 by swiss scientist Friedrich Miescher. No one new how DNA worked until American James Watson and Englishman Francis Crick build a model of it in 1952. They knew from the work of others what DNA was made from, but no one new how the pieces fitted together. British scientist Rosalind Franklin discovered that the DNA was a helix. Once Watson and Crick realized that A joined to T, and C to G, they could build a model of DNA. The more accurate description of the role of DNA is that it bears information or biological instructions that are read by the cell machinery in the productive processes. This information is used in production of various body proteins in the productive processes. DNA also contains information that is passed from the parent organism to the offspring. Since the creation of the DNA fingerprint technique by an English geneticist known as Jeffrey, the technology has found many applications as a tool of forensic science in the examination bio samples. The technique has by now replaced the traditional tests of bio samples. The technique enables the forensic investigators to analyze and identifies many bio samples, example hair, tooth, muscle, bone, semen stain, and saliva (Siegel, 2008). The technique can be used even when the quantities are very small. DNA analysis has therefore become a

major force in the modern criminal investigation and it has been successfully applied in major cases for the last few years. DNA can be extracted from a variety of cells in the laboratory by following a laid down procedure. This lab confirms that DNA molecules are not only found in the cells of the blood but also in a variety of other tissue cells. The experiment is based on the knowledge that cell membranes are made up of lipid layers and fat molecules, and that DNA is found in the cell nucleus and that enzymes acts as catalysts that speed up chemical reactions. In this lab, cheek cells are collected using a swab. These cells are chemically treated to break open the tiny cheek cell to expose the nuclear membranes. To separate the part of the cell mixture, the collected cells are placed in a lysis solution in a test tube. The test tube is closed and placed into a bath of warm water. This separates the nuclei containing DNA from the rest of the cell membranes and the proteins that wrap the DNA. Salt is added to the sample to cause the proteins and other cellular portions to clump together. The sample is then placed in a centrifuge. The centrifuge is closed and turned on. The spinning action of the centrifuge causes the heavy clumps to sink while the lighter strands of DNA remains in the liquid at the top layer. This liquid containing the DNA is extracted into another test tube and some isopropyl alcohol is added to it. The solution becomes " precipitated" and the dissolved DNA is altered. The 'precipitated' can now be observed with the naked eye.