**Peter Benjamin**

**Pha 210**

**18/mhs07/048**

**Pharmacology**

**ASPECTS OF MEDICAL BIOTECHNOLOGY**

**BIOPHARMACEUTICAL**

Through advanced methods in biotechnology, biopharmaceuticals were produced safely and quickly for treating illnesses. Furthermore, biopharmaceuticals do not contain any chemicals and use targeted organisms to synthesize the medicine successfully. Big molecules of proteins are the typical origin of biopharmaceuticals. When they are inside the human body, they target dangerous and hidden parts of the disease and obliterate them. Today, scientists and researchers are aiming to extend and develop biopharmaceutical medicines which can be used to fight diseases related to heart, hepatitis and cancer.

**PHARMACOGENOMICS**

Pharmacogenomics is the technique that leverages the person’s heredity information to choose the best biotechnological medicine for their illness. This studies the body system’s response to certain medications. To put it simply, this is the combination of advances in pharmaceuticals along with genomics. The end goal of this application is to improve medicines that are specifically targeted to a person in lieu with his genetic makeup to ensure effective treatment of illness. The end goal of this branch of medical science is to effectively produce biotechnological medicines which are placed in the patient’s body in accordance with his genetical makeup.

With the use of pharmacogenomics, medical companies can produce medicines that depend on the proteins, compounds, and RNA particles based on the chosen qualities and infections applicable.  Synthesized medicines are almost guaranteed to improve remedial effects, in addition to diminishing harm to other nearby cells. With the knowledge of the person’s hereditary inclinations, specialists can ascertain how well the patient’s body can prepare and process a medication and decide the correct amount of medication doses. As a result, an accurate prescription will be given, and the chance of overdose is mitigated.

**RAPID DEPLOYMENT OF VACCINES**

A global pandemic is a real issue and has always proven its powerful grip on humanity. Through Biotechnology, scientists and researchers can quickly pinpoint precursors or markers that can cause severe illnesses and diseases. As a result, they can synthesize vaccines quickly against any dangerous pandemic sickness. In a study on vaccines and biotechnology, researchers found a great decline in illnesses when patients were administered with a vaccine produced through biotechnology.

More advanced and innovative methodologies include genomics, pharmaceuticals, DNA sequencing, cell culture, interference RNA, and genome editing have effectively improved the growth and understanding of health science, through gene sequencing, stem cells for regenerative medicine, tissue engineering, and antibiotics.