



Preparation of Biomedicine against Chronic Diseases

Sabna Kotta*

Department of Pharmaceutics, King Abdulaziz University, Saudi Arabia

INTRODUCTION

The synthesis and regulation of a cell's DNA, RNA, and protein is the subject of molecular biology. Macromolecule blotting, Gel electrophoresis, and polymerase chain reaction are just a few of the DNA manipulation methods used in molecular biology. A mixture of the desired DNA, DNA polymerase, primers, and nucleotide bases is put into a machine for the polymerase chain reaction. The machine heats up and cools down at different temperatures to break the hydrogen bonds that hold the DNA together. After the DNA is separated, the nucleotide bases can be added to the two DNA templates. The field of study known as biomedical science or biomedicine focuses on health-related applications of biology and chemistry. Life sciences, physiological sciences, and bioengineering are the three main areas of specialization in this broad field. The majority of careers in biomedical science are research and lab-based, with the goal of expanding our understanding of medicine.

DESCRIPTION

Due to the breadth of this field, graduates have numerous opportunities to specialize early on in their education and numerous career options. It is a discipline that is very real world. With tangible results, biomedical scientists frequently make headlines for their innovations in their fields. You might 3D-print a heart, grow embryos for *in vitro* fertilization, or discover a novel cancer treatment as a biomedical scientist. Gel electrophoresis is a method for identifying DNA similarities between two unidentified samples. Preparing an agarose gel is the first step in this process. DNA can be poured into the wells on this jelly-like sheet. The DNA, which is negatively charged due to its

phosphate groups, is attracted to the positive electrode by an electric current. Because some DNA fragments are larger than others, different rows of DNA will move at different speeds. Therefore, it is possible to determine that two DNA samples are identical if their patterns on the gel electrophoresis are comparable. The field of biomedicine is where biology, chemistry, and changing the world come together. An autoradiograph is the formation of black bands on the film due to the radioactivity of the probes. After gel electrophoresis, a procedure known as macromolecule blotting is carried out. A container is used to prepare an alkaline solution. An agarose gel is placed on top of a sponge that has been submerged in the solution.

CONCLUSION

The agarose gel is then covered with nitrocellulose paper, and paper towels are added to create pressure on top of the nitrocellulose paper. The alkaline solution is drawn toward the paper towel in the upward direction. The DNA denatures in the alkaline solution during this process, rising to the nitrocellulose paper. After that, a solution containing the DNA fragments, or the probe, found in the desired DNA sample is placed in a plastic bag and the paper is placed there. The complementary DNA of the bands already present on the nitrocellulose sample is annealed by the probes. After that, the probes are washed away, and only those that have annealed to complementary DNA on the paper remain. The paper is then adhered to an X-ray film. Consequently, the film only contains DNA patterns that are comparable to the probes. Multiple DNA samples similar DNA sequences can be compared as a result of this. The whole process leads to a precise reading of the similarities between DNA samples that are alike and different.

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Corresponding author Sabna Kotta, Department of Pharmaceutics, King Abdulaziz University, Saudi Arabia, E-mail: saban@k163.sa

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