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Opinion

Book Review 'Cancer and Carcinogenesis'

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Abstract:

Chromosomes consist of DNA and proteins. Genetic information that regulating cell function resides within the DNA structure and not within proteins. The more chromosomes, the higher the DNA content.

keywords: genetic material; transcription; translation; dna mutations

Summary

Written by Dr. apt. Laela Hayu Nurani, M.Si., Prof. Dr. apt. Nurkhasanah, M.Si. & apt. Lalu Muhammad Iham, M.Farm., Ph.D., the increasingly advanced development of Cell Biology provides demands on students, especially pharmacy students to understand the various developments of diseases, especially cancer diseases is currently a problem due to its high prevalence deaths caused by this disease in Indonesia. Pharmacy students who will later deal directly with these problems, both with patients and in the laboratory, required to understand the basic concepts of cancer to therapy. This book on Cancer and Carcinogenesis is highly recommended as one of the media in learning for pharmacy students to makes it easier in completing lectures in Cell Biology courses. This book is equipped with research stages carried out by the author until the testing stage and the results. It can be used as a reference and example for students who read it. On the other hand, this book contains theories of cancer and carcinogenesis basics to treatment therapy as well as using supportive and reputable, references, making it easier for students to understand it. There fore this book on Cancer and Carcinogenesis is expected can provide benefits for readers especially pharmacy students. In completing their lectures, students are guided to be able to comprehend, understand and master the science of cancer and carcinogenesis correctly to achieve a doctor graduate degree. This book on cancer and carcinogenesis is published to be able to used by students as a reference in lecture courses of

Cell Biology.

This book contains material for 14 face-to-face meetings. The first and second meetings with introductory main material contain the definition of DNA as genetic material, transcription, translation; DNA mutations, types of mutations, causes of mutations and their consequences and carcinogen. The third to fifth meetings discussed proliferation cells which include the cell cycle, proliferation mechanisms and genes role in proliferation; apoptosis which includes definitions, genes which play a role in apoptosis, apoptotic defects and their consequences; as well as regarding polymorphism which includes definitions, mechanisms and as a result. The sixth and seventh meetings carried out article reviews and presentation. The ninth and tenth meetings discussed chemopreventive and chemotherapy trials, as well as in vitro and design in vivo. The eleventh to fourteenth meetings discussed technique of protein analysis: immunohistochemistry, apoptosis detection techniques and technical DNA analysis: flow cytometry, electrophoresis, staining AO-ETBr, AgNOR. The discovery of deoxyribonucleic acid/deoxyribonucleic acid (DNA) starting from its shape in the form of a double helix. Watson and Crick was the discoverer of this form of DNA in 1953. At that time, they published their observations in the Nature Journal with title "Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acid". Several decades later to be exact in 1966, the discovery was refined by discovery from Holley, Khorana and Niremberg who stated that DNA which is in the form of a double helix is composed of the base codes A-T-G-C. Humans consist of organs. Inside our organs there are billions of cells; inside the cell itself there is a nucleus; in the nucleus contains chromosomes; and it is in these chromosomes that are found the smallest component in our body is called DNA. Chromosomes consist of DNA and proteins. Genetic information that regulating cell function resides within the DNA structure and not within proteins. The more chromosomes, the higher the DNA content. The process of protein synthesis provides cells with regulatory molecules essential for cellular function and survival. Protein synthesis plays an important role in all aspects of cellular life.

Translating genetic information encoded in mRNA molecules into a polypeptide chain is a multistep procedure which is complex and involves many regulatory factors and additional components (mRNA (RNAd), rRNA, tRNA, RNA polymerase enzyme, aminoacyl tRNA synthetase enzyme and peptidyl transferase enzyme). RNA which is encoded is used to carry out protein synthesis in a process called gene expression. The conclusion is that this book is highly recommended as one of the media in learning for pharmacy students to makes it easier in completing lectures in Cell Biology courses. This book is equipped with research stages carried out by the author until the testing stage and the results; it can be

used as a reference and example for students who read it. On the other hand this book contains theories of cancer and carcinogenesis from basics to treatment therapy and using supportive and reputable references to make it easier for students to understand.

Reference

1. Dr. apt. Laela Hayu Nurani, M.Si., Prof. Dr. apt. Nurkhasanah, M.Si. & apt. Lalu Muhammad Irham, M.Farm., Ph.D. (2023). *Kanker dan Karsinogenesis*. Yogyakarta: UAD PRESS.

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