**Pharmacodynamics and Recombinant DNA Technology**

Pharmacodynamics is an emerging field that seeks to apply genetics in understanding the pharmacology f drugs. Particularly, scholars have focused on developing effective approaches of understanding the drug responses that different people exhibit. The application of pharmacodynamics in prescription represents one of the significant applications of genetics in enhancing drug efficacy. There is evidence that genetic differences have a critical role to play in determining how individuals metabolize specific drugs. Pharmacodynamics seeks to establish the specific way in which drugs register action in the human body. Genetic advances have helped in analyzing the variation in drug efficacy. The use of recombinant DNA technology has helped in understanding pharmacodynamics at a deeper level. Recent studies have demonstrated that some clinically important drugs exhibit different mechanisms in people from various ethnic and racial backgrounds. The efficacy levels vary significantly across races and ethnic groups. The side effects of such drugs also vary across races. Scholars have outlined the critical role of genetic factors in the treatment outcomes of different patients.

Through recombinant DNA technology, it is possible to develop sequence variants that represent the genetic difference observed across races. The development of these sequence variants has become an effective approach in helping scholars to understand the mechanism of action of various drugs with emphasis on registering a revolution in the manner in which drug prescription occurs. With adequate information on the differences in drug efficacy, it will be possible to develop a better regimen for each patient as a way of enhancing drug effectiveness. Recombinant DNA technology has become a critical procedure in the development of drugs (Khan et al., 2016). The genetic engineering processes have helped in developing effective models of drug development that empower researchers to develop drugs that exhibit the required levels of efficacy in various patients. Recombinant DNA technology has become an important procedure in assessing individual responses to therapeutic agents. The findings from such studies have formed the basis on which the development of effective drugs for people from various races occurs. Genetic engineering has become successful after the sequencing of the human genome. With the success of the sequencing, it has become possible to establish effective approaches to addressing the genetic differences observed across races using recombinant DNA technology. These advances are likely to enhance racial justice and reduce health disparities that have to serve to compromise health outcomes in certain populations. It is no possible to develop drugs that cab register efficacy in specific patient populations.

Genetic polymorphisms are responsible for the varied responses that individual register to certain drugs. Recombinant DNA technology has been helping scholars to specifically identify the most important polymorphisms that can trigger varied responses to therapeutic agents. Recent studies have helped in the development of new knowledge concerning the existing polymorphisms (Stryjewska, Kiepura, Librowski & Lochyński, 2013). Such knowledge will be easily applicable in the development of drugs that are effective for patient populations with certain single-gene variations. Although most of these studies have not been conclusive, there is evidence that the advances are in the right direction. In the future, drug development will be more specific and will pay attention to the impact of such polymorphisms. The success of pharmacogenomics will yield positive outcomes in promoting higher levels of drug efficacy in various patients. These advances will ensure that drug development pays attention to the genetic differences across races.

**References**

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