

Genomic revolution; Recombinant DNA technology; Personalized medicine; CRISPR-Cas9; Genetic variation; Molecular biology; Biomedical ethics

Genomic Revolution, propelled by Recombinant DNA

The genomic insights obtained from the HGP have paved the way for personalized medicine. Understanding the genetic basis of diseases has enabled the development of targeted therapies, diagnostic tools, and preventive strategies tailored to an individual's genetic makeup. Genetic testing for susceptibility to certain diseases, drug response prediction, and the identification of therapeutic targets are now a reality, marking a paradigm shift from one-size-fits-all medicine to precision medicine [7].

The ability to manipulate and understand the human genome raises ethical concerns. Issues such as genetic privacy, consent for genetic testing, and the potential misuse of genetic information necessitate careful consideration. The ethical landscape expands with the