

Primer on Genomics II
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The Primer of Genomics II discusses the chemical structure of nucleic acids, DNA and RNA and their corresponding nucleotides. DNA then serves as template for making a copy of mRNA in process called **transcription, followed by the process of translation, where** RNA dictates correct sequence of amino acids to make proteins. From what component in a whole blood sample, can a researcher extract a DNA sample? The answer WBC or lymphocytes, since they are nucleated cells, and DNA is found only in nucleus. The Primer then describes the various methodologies used for **DNA sample prep** including mini spin columns which bind DNA (Qiagen), or Gentra's Purgene® kit. Next covered are the different types of nucleic acid amplification/detection systems including **PCR, bDNA, TMA**.

The second section of Primer on Genomics II covers topics such as Functional genomics, and SNPs (Single Nucleotide Polymorphisms). We discuss that SNPs naturally occur ~once per 1000 bases, and SNPs are responsible for individual variation in drug response. The Primer covers the topic of **DNA Micro arrays or Biochips, and that** Biochips can distinguish SNPs present in a sample. Covered also are methods to make DNA chips including Photolithography (Affymetrix) and **"Spotted" DNA chips** (robotic device). Also discussed are companies involved in **protein micro arrays** in which proteins are attached to solid surface, and **Tissue Micro arrays** in which one gene at a time is surveyed in thousands of tissue specimens. The primer on Genomics II finishes by discussing the Financial Forecast of Micro array technology, and why it will revolutionize predictive medicine and the medical diagnostics field.