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**18/mhs07/048**

**Pha 210**

**Pharmacology**

**Applications of DNA Fingerprinting in Medicine**

**DNA fingerprinting serves several uses in medicine. One important instance is identifying good genetic matches for organ or marrow donation. Doctors are beginning to use DNA fingerprinting as a tool for designing personalized medical treatments for cancer patients.**

**Parentage testing**

**DNA fingerprinting is an advantageous technique in cases, such as, of establishing the paternity of disputed offspring or cases of baby swapping. This method replaced ABO blood antigen systems which cannot establish paternity but can conclusively exclude an alleged father from being a candidate. Disputed paternity originates because of affiliation orders, divorce proceedings and questioned the legitimacy, also is used to discover paternity in cases of inheritance, guardianship, maintenance, legitimacy, adultery or fornication9.**

**In Parentage testing, a DNA comparison is performed between progeny against potential parents. Children inherit half of their alleles from each parent and thus should possess an alleles combination of their parents.**

**Anthropological genetics**

**In anthropological genetics, markers have been used as ancestry- informative markers to reconstruct the human diaspora and to interpret the evolutionary history of human populations to inquire population origins, migration, admixture and adaptation to different environments, as well as susceptibility and resistance to disease10.**

**The main markers used by anthropological genetic are variable- number tandem repeats (VNTRs), short tandem repeats (STRs), mitochondrial DNA haplo groups, Y-specific non-recombining region (NRY) haplotypes, and single nucleotide polymorphisms (SNPs).**

**In the medical field, researchers have made possible the mapping quantitative trait loci involved in biological pathways of diseases such as diabetes mellitus, cancers, obesity, osteoporosis, and coronary heart disease. In the studies of population, markers allow identifying the presence, absence, or high frequency in some populations and low frequencies in others, of certain genetic traits that characterize some specific population. DNA fingerprinting is a chemical test that shows the genetic makeup of a person or other living things. It's used as evidence in courts, to identify bodies, track down blood relatives, and to look for cures for disease.**