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DNA PHENOTYPING



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Many discoveries and inventions have led to the advancement of science and technology. Forensic was introduced during the 1830s and has gotten bigger now. Many new technologies of forensic science have been launched that have helped the crime scene investigations to go smoothly by identifying the suspect sooner than expected.

DNA phenotyping is one of the latest and advanced technologies of forensic science. This is basically a technique to predict an organism's or a person's phenotype that is nothing but the individual's characteristic features and physical appearance with the help of genetic information, that is, DNA samples.

Now, you might question how this is helpful in the forensic field.

As we are aware, DNA defines eye colour, hair colour, skin, etc. The genetic instructions for all these are written in DNA. Many violent crimes in America were backlogged, and that's when DNA phenotyping played a major role by giving useful leads for furthering investigation and narrowing down the suspect list.

It was Parabon NanoLabs that developed a software that could give information about the DNA left in the crime scene. Parabon Snapshot is a DNA phenotyping tool or more of a software that creates a face imaging sketch of a person with the help of DNA samples helping the investigator to know what a suspect looks like. The snapshot system hardly needs a nanogram of DNA, and after the collection runs it through the snapshot algorithm, it, in turn, would produce the prediction of a person.

Again, you might wonder how a snapshot system works.

Everything lies in the hands of the SNP information that is “Single Nucleotide Polymorphism”. In short, we can call it snips.

What are snips exactly?

The human genome contains approximately 3 billion base pairs and a variation in the single base pair is called snips. Sometimes when a genome is copied to make new cells, a single base pair is left out or added or even substituted. This leads to snips and this makes the genetic variation. This is why we all look different.

Isn't this interesting! Just imagine how a miniature substance makes a whole lot of difference.

The snapshot interprets the SNP information from a DNA sample of an individual to identify what a suspect looks like, and this will be easier for the investigator to find the suspect.

It has been said snapshots are totally error-free and highly accurate, although some of the scientists questioned the accuracy and doubted if the system could recreate the face image sketch. More importantly, the study and analysis of an unknown person through this snapshot system requires a comparison, and if it is not possible, then the only way is to search and find the DNA database of the suspected person.

The system is more likely dependent on a pair of reference samples. It must be kept in mind that the snapshot is way too expensive, and therefore it cannot be used for every investigation.

There are many other technologies coming up, and this latest development would definitely be a great benefit.