

The Principle Behind DNA Paternity Testing

DNA stands for deoxyribose nucleic acid. This is a factor present in the chromosomes of the human nucleus. Each human nucleus contains 48 pairs of chromosomes which contain the deoxyribose nucleic acid. Out of these 46 chromosomes are the autosomes, which affect the general characteristics of the person, while the other two are the sex chromosomes, X and Y. Men have the XY combination, while women have the XX combination. The sexual gametes of both (sperm in males, egg cells in females) contain half of this combination. Thus, while the male sperm can contain either the X or Y sex chromosome, the female egg cells will always be X. Depending on this, when the reproduction occurs, the male X or Y might combine with the female X to produce an XX or an XY combination, i.e. a girl child or a boy child. That is the reason why it is said that the sex of the offspring depends on the father and not the mother. However, this is another issue altogether. What's more important to us to know here is that when the reproduction occurs, another very important component from each of the gamete cells combine with each other. This is the DNA molecule, which is present with the chromosomes, both sex chromosomes and the autosomes. The deoxyribose nucleic acid is a long winded molecule, with a pattern of interconnected nitrogen bases, phosphoric acid molecules and a five-carbon atom sugar known as the deoxyribose sugar. What makes the DNA different in each person is the pattern in which the nitrogen bases occur. In fact, there are infinite combinations in which DNA testing centers can occur, making every person's DNA quite unique from each other. Now when the offspring is produced, the deoxyribose nucleic acid of the child produced will be roughly equivalent to half the DNA of the father and half the DNA of the mother. That is why if the DNA of the child and an alleged father are analyzed, it can be determined with absolute accuracy whether the person is indeed the father of the child or not. This is the basic principle of DNA paternity testing. Deoxyribose nucleic acid paternity testing, samples of DNAs from both the child and the person who is supposed to be his/her father are sent to a lab for examination. By precise testing methods, they find out similarities and dissimilarities in the patterns. If half of the child's DNA is found to be similar to the adult's DNA, then that adult is most probably the child's father. However, these tests have a great degree of accuracy, especially in negative testing, i.e. the person is not the father of the child.

About the Author

Sean's articles are always intended to educate about something new that's happening in the world around us. This article on DNA Paternity Testing tells about something we might need to use it sometime. You can read more articles from him on the subject at the following link:<http://www.gene-tree.org>

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