



## **Short Tandem Repeats (STR) Used as DNA Markers and Their Stability under the Effect of Environmental Factors**

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**Abstract:** A forensic DNA laboratory often has to deal with DNA samples that are less than ideal. The biological material serving as evidence of a crime may have been left exposed to a harsh environment for days, months, or even years, such as in the case of an investigation into a missing person. Enemies to the survival of intact DNA molecules include water and enzymes called nucleases that chew up DNA. The substrate where the samples are deposited on is important as well. The samples used in the study are human blood samples in different conditions collected from different matrix. These have been studied to analyze the stability of DNA markers used to obtain the DNA profile in Forensic Science using Amp F1STR Identifier Kit. In general a full profile was obtained from most of the samples with some exception. In our study Short Tandem Repeat (STR) fragments are shown to be very stable. However in a few samples analyzed is obtained partial DNA profiles. The loci which shown to be degraded were particularly longer fragments such as D7S820 CSF1PO D18S51 and FGA. We were not able to obtain any DNA profile from high degraded samples and presence of inhibitors on it.

**Keywords:** *DNA markers, DNA profile, nuclease, matrix, STR fragments.*

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