



tached to the frame. The cloth seatbelt harness strap was also stained where it was attached to the chassis. Next, the metal trim plate inside the driver's door, attached to the rocker panel was removed. Underneath were chunks of crusted material, dark red in color. After removing the metal trim plate I was able to lift back the new carpeting. Given the effort that had gone into re-doing the interior of the vehicle, I was surprised to find that the new carpet had been laid over the original padding. At first glance the padding revealed nothing, however when I pulled it back I was pleased to see a large reddish stain. Finally, when I removed the front seat, which was a bench type, I found that the center seat belt strap was also stained red. I had carefully photographed my discoveries as they were made, and documented the locations in my notes. My next step was recovery and collection of the suspected blood.

In standard crime scene procedures recovery of all suspected blood is accomplished by scraping, swabbing, or collecting the entire blood stained item. I used all three methods in this case. In all, eight items or samples were collected and submitted to the lab.

It was not until October that I was notified by the lead detective that 7 of the 8 samples or items submitted was blood and they had been identified as belonging to the victim in the case. This was done with DNA analysis.

My involvement in this case began at 8:30 a.m. and ended at 8:00 p.m., when I had submitted the last item of evidence. In a systematic approach to crime scene processing, consisting of SCENE RECOGNITION; SCENE DOCUMENTATION; and EVIDENCE RECOVERY, a crime scene investigator is often faced with tedious and time consuming work, and even an aggressive approach may not produce the positive results desired. But when they do, the results are worth the effort expended. ■

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Genetics in Forensic Science for Non-scientist

By N. Alice Yamada

In the past decade or so, recombinant DNA technology and genetic engineering have experienced an explosion of knowledge and new discoveries. From early detection of defective birth to the O. J. Simpson trial, genetic technology is everywhere. We hear words like RFLP, PCR, and VNTR, but what exactly are they saying? How accurate are these results in forensic science and how do we know what we think we know?

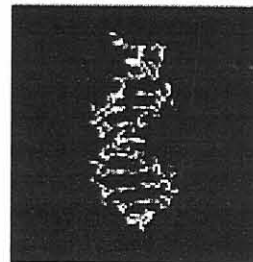
Here's a quick and comprehensive introduction to recombinant DNA technology. In the near future, all this may become general knowledge much like how everyone knows that the earth revolves around the sun. But for now this is a start.

Basically, your genes are comprised of DNA, which are these super condensed chains of chemicals. It's been stated over and over that your DNA is a double helix (two chains in a helical pattern). The chemicals in the chains have initials and they are A, G, T, and C. A and G are sisters and T and C are brothers; A and T are always paired up together and G and C are also hooked up. These chemicals may be lined up in different orders and repeat in many different patterns. The repeating sequence is called *tandem repeats*.

Each person has different numbers of tandem repeats. Let's say your repeat sequence is Gccc, and you have 3

of these copies, so your DNA looks like this: GcccGcccGccc. These repeats bring individuality in your DNA pool. VNTR stands for Variable Number Tandem Repeats, and detects the length of tandem repeats in your DNA. VNTR's are especially useful in forensic science, because the chances of somebody else having the exact same VNTR results, if done in careful lab conditions, is less than one in a million.

In forensic science, it is common to have only a small amount of sample to use for lab work. This sample can be a tiny bit of blood, sperm, mucus, etc. PCR is simply an amplification method of making a sufficiently big pool of DNA sample from a very small amount.



Jurassic Park based its creation of dinos on this amplification method. PCR is a very simple and easy method, and it is one of the

most important techniques in genetic study. More explanation is found in several Web sites, such as the clinical genetics page at <http://www.trincoll.edu>. ■

(This article was condensed from an article found on the internet.)

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