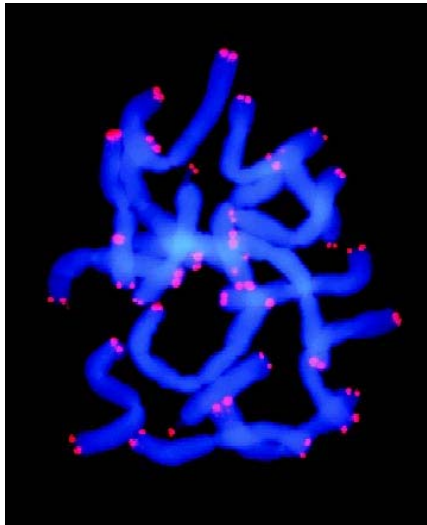


# Hypervariable 'minisatellite' regions in human DNA



[Alec J. Jeffreys](#), Victoria Wilson & [Swee Lay Thein](#)

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[Catherine Buhariwalla](#), [Jill Collins](#), [Mike Hurley](#), [Heather Stone](#)

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[Previous Method of Genetic Analysis](#)

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## Introduction

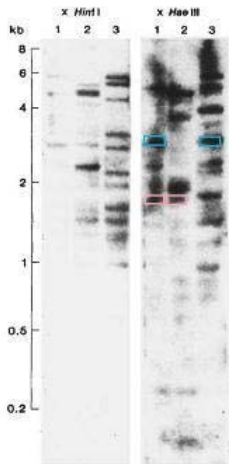
- Genetic analysis is now simplified by the availability of probes for hypervariable regions of human DNA showing multiallelic variation and correspondingly increased heterozygosities.
- Wyman and White isolated the first by [chance](#)
- Other highly variable regions have also been discovered: near the human insulin gene, alpha-related globin genes and the c-Ha-ras-1 oncogene.
- [Minisatellite](#): variable region consisting of tandem repeats of a short sequence.
- Polymorphism results from allelic differences in the number of repeats

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[The Probe](#)

## Like Parents, like daughter

- Hybridization of this probe with human DNA was completed.
- To improve the detection of polymorphisms, DNA was digested with [Hinf1](#) or [HaeIII](#)
- Cleave at 4-bp sequence not present in the probe, which will release small DNA fragments
- This was completed with a daughter and her two parents. The bands were transmitted in a Mendelian fashion.



1-Daughter; 2-Mother; 3-Father

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## Highly Polymorphic Minisatellites

### A x Sequence in Minisatellites?

## Pedigree Analysis

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## Conclusions

- Showed that human DNA can be used to create probes for minisatellite regions
- Showed that a core sequence can be used to analyze many regions
- More minisatellite regions exist that have different core repeat sequences
- New mutations can provide evidence about gene exchange and recombination during meiosis

## Uses of DNA Fingerprints

## A Historical Breakthrough

## [Applications of DNA Fingerprinting](#)

[DNA fingerprinting animation](#)