Skippy in the limelight

Kangaroos and platypus—cute and cuddly, odd and unique

A special issue stamp depicts kangaroo chromosomes in recognition of 50 years of genetics (2003). The artistic interpretation "reminds us that a spark of creative vision often triggers scientific breakthroughs" according to the designer Rod Oliver.

Featured in many Australian logos, the kangaroo is a typical Australian icon. It appears in The Australian Academy of Science's Coat of Arms.

Australian animals are loved the world over because they are unusual. It is precisely this oddness that is of particular interest to geneticists, biotechnologists, physiologists, biochemists and pharmacologists.

*We can find out more information about our genes and important **control genes** by comparing our DNA with that of other animals. Areas of similar DNA indicate genes that are biologically important across all species.*

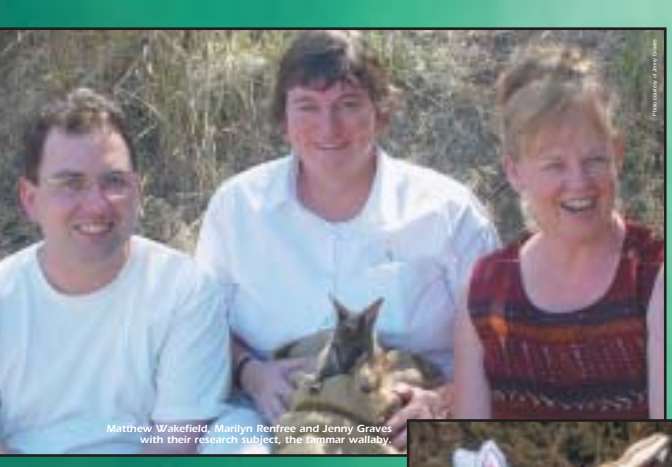
The more important the gene's job, the greater its similarity between species.

EUREKA!

Marsupials are our **distant relatives**, and most of their DNA sequence has changed from that in humans. Yet by studying the genes that are still common, we can 'zero in' on the important control genes.

These are the genes that regulate other genes. Their role is to act as a switch turning other genes on and off at the right time. It is these control genes that make the difference between a kangaroo and a human.

Geneticist Jenny Graves plans to sequence the entire **kangaroo genome** in five years. Along with colleagues Marilyn Renfree, Des Cooper and Sue Forrest, she has made a start on the tammar wallaby.[1]



Photography © Jenny Graves

Matthew Wakefield, Marilyn Renfree and Jenny Graves with their research subject, the tammar wallaby.

Bilby versus Bunny. Which one do you buy?

WHAT NEXT?

Understanding how genes work in kangaroos and humans.

Identifying special marsupial genes that might lead to new human drugs or improvements in agriculture.

Understanding the environmental and genetic conditions that make species prone to extinction, leading to better protection systems for Australia's biodiversity.

1. The Kangaroo Genome Project (http://kanga.anu.edu.au).