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New brain gene gives us edge over apes, study suggests

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Scientists have taken a step forward in helping to solve one of life's greatest mysteries – what makes us human?

An international team of researchers have discovered a new gene that helps explain how humans evolved from chimpanzees.

Scientists say the gene – called miR-941 – appears to have played a crucial role in human brain development and may shed light on how we learned to use tools and language.

Researchers say it is the first time that a new gene – carried only by humans and not by apes – has been shown to have a specific function within the human body.

A team at the University of Edinburgh compared the human genome to 11 other species of mammals, including chimpanzees, gorillas, mouse and rat, to find the differences between them.

The results, published in *Nature Communications*, showed that the gene – miR-941 – is unique to humans. The researchers say that it emerged between six and one million years ago, after humans had evolved from apes.

The gene is highly active in two areas of the brain that control our decision making and language abilities. The study suggests it could have a role in the advanced brain functions that make us human.

It is known that most differences between species occur as a result of changes to existing genes, or the duplication and deletion of genes.

But scientists say this gene emerged fully functional out of non-coding genetic material, previously termed "junk DNA", in a startlingly brief interval of evolutionary time. Until now, it has been remarkably difficult to see this process in action.

Researcher Dr Martin Taylor, who led the study at the Institute of Genetics and Molecular Medicine at the University of Edinburgh, said the results were significant.

He said: "As a species, humans are wonderfully inventive – we are socially and technologically evolving all the time. But this research shows that we are innovating at a genetic level too. This new molecule sprang from nowhere at a time when our species was undergoing dramatic changes: living longer, walking upright, learning how to use tools and how to communicate. We're now hopeful that we will find more new genes that help show what makes us human."

Provided by University of Edinburgh