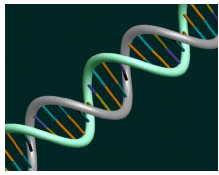


10 October 2008

By: Tudor Vieru, Science Editor



A sample DNA strand model
Yale University

Die Hard DNA

The snippets are believed to have evolved very little in millions of years

Geneticists uncovered portions of mammalian DNA that mutated very little over the course of human evolution, roughly 80 to 100 million years long. The tiny snippets are thought to be more than 300 times less likely to disappear over the years. The find only further goes to show how little medicine actually knows about the human genome and its role. As of yet, no one has been able to determine exactly what the little piece of DNA actually does or why it's so resilient to outside mutagen factors.

Until now, researchers studying the DNA found about 500 such portions on the strands, which basically seem to have remained unchanged since the acid was first created. The pieces of strands are made up of basic protein bounds, like normal DNA. But somehow they seem to be able to reject foreign influences much faster than other portions of the strands. This means that, during evolution, no mutations, no matter how strong, were able to change these protein segments.

Stanford researchers, led by Gill Bejerano, professor of developmental biology and computer science, named these portions of DNA "ultraconservative regions." The term may actually be an understatement, as the proteins forming the regions virtually remained the same as they were when our DNA came to be, millions of years ago, adding to other mysterious portions of our genome, which have yet to be fully understood.

At this point, Bejerano says that geneticists can only speculate over the role ultraconservative regions play in human lives. One theory states that they may hold the key to overlapping layers of information being accessed at the same time, while another one argues that they could play a vital immune role from time to time, as it's the case with diseases that occur once in a few millenniums. Such extinction events could render common DNA-regulated immune responses ineffective, so a back-up plan would have to be in place to ensure the survival of the human race. But currently, these are just speculations. Scientists say that there is still a long way to go towards deciphering even the most basic portions of DNA strands.