



Genetic Research Reinforces Theory Of Evolution

Scientists led by a Children's Hospital of Pittsburgh geneticist have found new evidence that a category of genes known as pseudogenes serve no function, an important finding that bolsters the theory of evolution.

Source: Children's Hospital of Pittsburgh

Date: August 2, 2006

There are approximately 20,000 pseudogenes in the human and other mammalian genomes. In recent years, there has been growing discussion about the nature of these pseudogenes. The issue centers on whether pseudogenes are functional or merely evolutionary relics with no function. It was long believed by geneticists that they were relics, until basic science research published in 2003 found a mouse pseudogene located within the Makorin family of genes that did have a function, namely to cause polycystic kidney disease and a bone disease known as osteogenesis imperfecta.

This finding, discovered in a mouse model, was hailed by proponents of “Intelligent Design” (ID). According to the Intelligent Design Network, the premise of intelligent design holds that certain features of the universe and of living things are best explained by an intelligent cause rather than an undirected process such as natural selection. ID is thus a disagreement with the core scientific basis of evolutionary theory.

However, researchers at Children's and the Wadsworth Center in New York, including first author Todd A. Gray, PhD, have found scientific evidence that contradicts this finding. The pseudogene in question – Mkrn1-p1 – indeed is not the cause of those diseases, according to senior author Robert D. Nicholls, DPhil, director of the Birth Defects Laboratories at Children's. Instead, according to Dr. Nicholls, it merely is an inactive copy of a gene, an evolutionary relic as previously believed. Results of this study are published in the Aug. 8 print issue of the Proceedings of the National Academy of Sciences.

“Discussion over evolution and Intelligent Design really has centered on whether pseudogenes, sometimes called ‘junk DNA,’ have a function or not. The suggestion is that an Intelligent Designer would not make junk DNA, so if a pseudogene does have a function, this is claimed to support the idea of an Intelligent Designer,” Dr. Nicholls said. “But there is no evidence that any of the 20,000 pseudogenes are functional. Our research proves this Makorin pseudogene does not have a function. It has continued to mutate over its short life of a few million years, a fact that supports evolution, and eventually will be discarded from the mouse genome.”

But the most important implication of this research from a patient perspective is that scientists now must go back to the beginning in terms of discovering the genetic mechanism that causes polycystic kidney disease and osteogenesis imperfecta in the mouse model, according to Dr. Nicholls.