CHIMP/HUMAN DNA SIMILARITY REEVALUATED

BY:
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For some while now, evolutionists and atheists alike have sited DNA similarity studies between chimpanzees and humans as one of their strongest lines of evidences in support of human and other primate common ancestry. Earlier comparative studies calculated a 98% similarity between Human and chimpanzee DNA. However, upon close examination of the data it will become evident there is far more left out of these studies than most people realize.

A recent report published in the Proceedings of The National Academy of Sciences suggests that the common quoted value 98% similarity between chimp and human DNA has been in fact misleading and incorrect. This figure is incorrect due to the fact it depends on just exactly what is being compared. The report by Dr. Roy Britten to the National Academy of Sciences points out, in spite of similarities there are also vast areas of significant differences that are often difficult to quantify.

According to Dr. Varki and Gagneux, both evolutionary geneticists, who compared the differences between large apes and humans, the

differences far out weight, the similarities. They not that these differences include, but are not entirely limited to, differences in both types and numbers of repetitive genomic DNA, transposable retro-elements, distribution and numbers of endogenous retroviruses, the presence and extent of allelic polymorphisms, the rates and types of specific gene inactivation events, major gene sequence and expression differences, gene duplications, single nucleotide polymorphisms, as well as several differences in messenger RNA splicing variations.

Some specific examples of these differences put forth by Gagneux and Varki is the fact, humans possess 23 pairs of chromosomes while chimpanzees possess 24. From the evolutionary standpoint it is believed that one of the human chromosomes was formed through the fusion of two smaller chromosomes of the chimp. They conclude this by the fact that the one human number 2, longer chromosome when compared is identical with the two smaller chip chromosomes when the two smaller chip chromosomes are merged end to end. Dr. David Dewitt, a Creation scientist however, points out, this is simply an extrapolated guess, and that there is no way to adequately test this hypothesis for scientific credibility. This one longer human chromosome number 2, could just as reasonably be explained by and intrinsic difference resulting from a separate creation, according to Dr. Dewitt.

He goes on to explain, “At the ends of each chromosome is a string of repeating DNA sequences called a telomere. Chimpanzees and other apes have 23 kilobases (a kilobase is 1,000 base pairs of repeating DNA). Humans, he states, are unique among the primates with far shorter telomeres only 10 kilobases long.” Dr. DeWitt, continues, “While it is true 18 pairs of chromosomes between humans and other primates are virtually identical, chromosomes 4, 9, and 12 show evidence of being remodeled. In other words, the genes and markers on these chromosomes are not in the same order in the human and chimpanzee. Instead of being “Remodeled” as evolutionists, suggest, these could, logically, also be intrinsic differences due to separate creation.”

Gagneux and Varki point out the differences in the “Y” chromosome in particular, especially in relation to both size and genetic DNA markers, which do not line-up at all between humans and any of the other primates.

Geneticists have compared clone maps of chromosome number 21 in particular. They have noted large, non-random regions of difference between the two genomes. They have observed numerous areas that could correspond to insertions that appear to be specific to the human lineage. It must be noted, these types of differences are usually NOT included in evolutionary calculations of percentage DNA similarities.

For example, numerous studies by researches comparing human and chimpanzee DNA drew on about 19.8 million bases in these studies. While that might seem like a great number, in reality it actually represents less than 1% of the total genome. The problem here is the fact they only take into account nucleotide substations and did not consider the numerous insertions or deletions in their calculations to arrive at the arbitrary estimate of a 98% similarity ratio. A substitution such is a mutation where one base in the nucleotide is replace by another. A deletion also called an (indel) is present where there are nucleotides missing from a sequence when two sequences are compared.

EXAMPLE OF SUBSTITUTIONS AND INSERTION/DELETION:

As can be seen by the above example, if there is a difference in the nucleotides, such as an “A” in place of a “G” this is known as a substitution. If on the other hand a nucleotide is absent it is referred to as an insertion

/deletion. It is assumed in these events that a nucleotide has been inserted into one of the sequences or conversely, one has been deleted from the other. However, it is often difficult if not completely impossible to know if the deference is due to an insertion or a deletion and thus, it is known as an indel. Indels it should be noted can present in virtually any length.

The study carried out by Dr. Britten, carefully evaluated some 775 or so, kilobase pairs, for differences between chimpanzees and humans. He discovered approximately 1.4% had been substituted, putting his findings in agreement with other evolutionary scientists' previous studies of about 98.6% similarity. What should be noted however, is that Dr. Britten found a significantly higher number of deletions, most of which were only 1 to 4 nucleotides in length, though there were a very small number that were more than 1000 base pairs long. Dr. Britten was surprised by the fact these deletions or indels contributed to an additional 4% of the base pairs that were different. The missing nucleotides from either chimp or human seem to account therefore, for more than twice the substituted nucleotides, which have been used to show similarities and therefore support common ancestry. Thus, it seems the data actually suggests more genetic differences than similarities when insertion/deletion is also considered in the equation. In addition, it should be pointed out, using percentages actually hides an important fact. If only 5% of the DNA is different, this still amounts to 150,000,000 DNA base pairs that are different between humans and the other primates. This is NOT a small or trivial number, but in terms of genetics, represents a very significant difference!

It should be noted there are numerous studies showing remarkable similarities in both nuclear DNA and mitochondrial DNA among modern humans. These sequences are so similar most scientists usually conclude a relatively recent common ancestor. Estimates from evolutionary scientists suggest a fairly recent ancestry of about 100,000 to 200,000 years ago. These estimates are based on chimpanzee and human DNA comparisons and require the presupposition of a chimp/human common ancestry about 5 million years ago. In contrast however, Dr. Dewitt points out, several studies of pedigrees or mitochondrial DNA comparisons from generation to generation, demonstrate a much more recent origin for ancestry getting estimated dates of between 6,500 and 10,000 years ago. These findings fit nicely into the creation model of origins, and certainly do not allow the time

required of evolution to make any changes from chip to human. Thus, it serves as simply another example in which the genesis account is strongly indicated, where both the chimpanzee and man were created as entirely separate species, and did not emerge from a common ancestor. It also serves as just one more example of how the presuppositions of evolution produce extrapolations, theories and conjecture, making claims, when carefully analyzed, which go beyond what the actual data permits.

SOURCES:

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