

## Response Claim CBO15

ID: DNA needs certain proteins in order to replicate. Proteins need DNA to form. Neither could have formed naturally without the other already in existence.

Morris, Henry M. 1985. *Scientific Creationism*. Green Forest, AR: Master Books, pp. 47-48.

Watchtower Bible and Tract Society. 1985. *Life--How Did It Get Here?* Brooklyn, NY, pg. 45.

## RESPONSE:

DNA could have evolved gradually from a simpler replicator; RNA is a likely candidate, since it can catalyze its own duplication (Jeffares et al. 1998; Leipe et al. 1999; Poole et al. 1998). The RNA itself could have had simpler precursors, such as peptide nucleic acids (Böhler et al. 1995). A deoxyribozyme can both catalyze its own replication and function to cleave RNA -- all without any protein enzymes (Levy and Ellington 2003).

## Talk Origins

1. Böhler, C., P. E. Nielsen, and L. E. Orgel. 1995. Template switching between PNA and RNA oligonucleotides. *Nature* 376: 578-581. See also: Piccirilli, J. A., 1995. RNA seeks its maker. *Nature* 376: 548-549.
2. Jeffares, D. C., A. M. Poole and D. Penny. 1998. Relics from the RNA world. *Journal of Molecular Evolution* 46: 18-36.
3. Leipe, D. D., L. Aravind, and E. V. Koonin. 1999. Did DNA replication evolve twice independently? *Nucleic Acids Research* 27: 3389-3401.
4. Levy, Matthew and Andrew D. Ellington. 2003. Exponential growth by cross-catalytic cleavage of deoxyribozymogens. *Proceedings of the National Academy of Science USA* 100(11): 6416-6421.
5. Poole, A. M., D. C. Jeffares, and D. Penny. 1998. The path from the RNA world. *Journal of Molecular Evolution* 46: 1-17.

## SWORD AND SHIELD REBUTTAL:

To begin with it is doubtful Dr. Henry Morris ever made the statement, protein needs DNA to form. This is an inaccurate statement. DNA requires protein to form, but protein does not require DNA to form. In addition, if such a thing was really stated by Dr. Morris, it is obvious Talk Origins failed to catch this scientific error. Now, as to the claim DNA could have evolved gradually from a simpler replicator, this is simply untrue. Proteins used in biological living systems are composed entirely of left handed amino acids. In nature, left and right-handed amino acids occur in equal numbers. Right handed amino acids completely prevent left handed amino acids from bonding together to form the much more complex proteins so necessary for the building of the DNA molecule, and therefore life. Talk Origins suggests RNA as the most likely candidate, since it can catalyze its own duplication. However RNA is simply a mirror image of DNA and as such also requires the formation and utilization of proteins. Proteins cannot form naturally as has already been stated due to the pervasive presents of right-handed amino acids. In this context, what

applies for DNA also applies for RNA. In addition, Leslie Orgel and Gerald Joyce, eminent evolutionary microbiologists revealed the absurd nature of the theory in their book, "In the RNA World":

" This discussion...has, in a sense, focused on a straw man: the myth of a self-replicating RNA molecule that arose de novo from a soup of random polynucleotides. Not only is such a notion unrealistic in light of our current understanding of prebiotic chemistry, but it would strain the credulity of even an optimist's view of RNA's catalytic potential.

"Dr. John Horgan, an evolutionist also went on record regarding the concept of the RNA world.

"As researchers continue to examine the RNA-World concept closely, more problems emerge. How did RNA initially arise? RNA and its components are difficult to synthesize in a laboratory under the best of conditions, much less under really plausible ones." The claim, "The RNA itself could have had simpler precursors, such as peptide nucleic acids (Böhler et al. 1995). A deoxyribozyme can both catalyze its own replication and function to cleave RNA -- all without any protein enzymes." (Levy and Ellington 2003). Is mere conjecture without a shred of empirical observation to base it on. Dr. Orgel defines the qualities such an RNA would have to possess and how totally impossible these would have been in an article published in *Scientific American* in October of 1994: "This scenario could have occurred, we noted, if prebiotic RNA had two properties NOT evident today: A capacity to replicate without the help of proteins and an ability to catalyze every step of protein synthesis." So, Contrary to Talk Origins claims, neither DNA nor RNA could have spontaneously arisen on their own; independent of intelligent direction, and this conclusion is based on all the known observed laws we witness in prebiotic chemistry.

#### REFERENCES:

Dr. Orgel, *Scientific American* in October of 1994

Dr. Leslie Orgel and Dr. Gerald Joyce, "In the RNA World"

Dr. Shapiro, R., Prebiotic cytosine synthesis: A critical analysis and implications for the origin of life, *Proc. Natl. Acad. Sci. USA* **96**(8): 4396-4401, 1999.

Dr. Lindahl, T., Instability and decay of the primary structure of DNA, *Nature* **362** (6422): 709-715, 1993.

Dr. Horgan, J., In the beginning, *Scientific American* **264**(2):100-109, 1991; quote on p. 108.