

What is Life? Deoxyribonucleic Acid (DNA) and Its Mathematical Treatment! (1834)

Sarva Jagannadha Reddy*

Department of Psychiatry, Amrita Schools of Medicine, Kerala, India

Introduction

The basic principle of "life" is, that there is a need for information to be passed, down to future generations. Any living body is a collection of atoms that fit together in a reproducible way and should have the capacity for carrying substantial information, rather than simply repeating a rote pattern. And, it is Deoxyribonucleic acid, DNA, that serves the purpose [1].

DNA is the molecule that essentially all known living organisms use to store the genetic information that guides their functioning. That information is encoded in a series of just four letters, each corresponding to a particular molecule called a nucleotide: Adenine (A) Thymine (T), Cytosine (C) and Guanine (G). These nucleotides are the alphabet in which the language of genes is written. The four letters string together to form long strands, and each DNA molecule consists of two such strands, wrapped around each other in the form of a double helix. Each strand contains the same information, as the nucleotides in one strand are paired up with complementary one in the other. A's are paired with T's and C's are paired with G's. and the specific pairing suggests copying mechanism for the genetic material [2,3].

Description

In the process of copying the two strands of DNA unzip from each other, then act as templates, with free nucleotides fitting into the appropriate places on each separate strand. Since each nucleotide will match only with its specific kind of partner, the result will be two copies of the original double helix. The information encoded in DNA directs biological operations in the cell (Figures 1 and 2) [4,5].

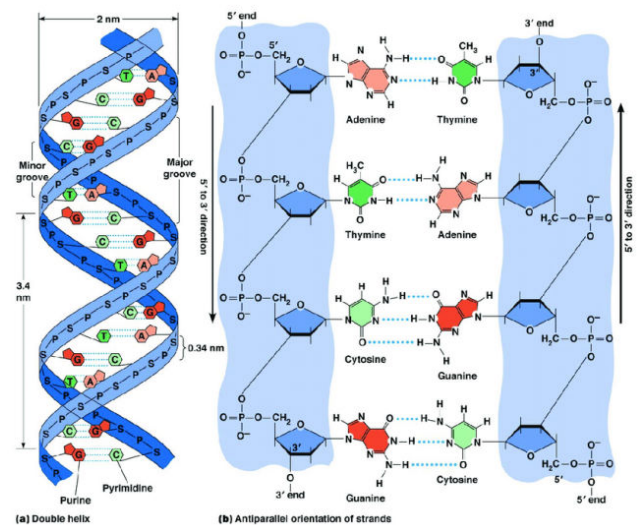


Figure 1. a) Double helix and b) Antiparallel orientation of strands.

Molecular weight

A: Adenine-135.13 g/mol

T: Thymine-126.1133 g/mol

G: Guanine-151.13 g/mol

C: Cytosine-111.1 g/mol

π constant: True π called Reddy π is

$14 - \sqrt{2}/4 = 3.14644660942 \dots$

Adenine: Thymine pairing and derivation of true π

*Address for Correspondence: Sarva Jagannadha Reddy, Department of Psychiatry, Amrita Schools of Medicine, Kerala, India, E-mail: rsjreddy134194@gmail.com

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Figure 2. DNA strands.

Adenine: Thymine pairing and derivation of true π .

$$\begin{aligned} & \{(A \times T \times \sqrt{2}) + (3 \times 5120) - (\sqrt{2} \times 5120) / 2 \times 5120\} = \text{True } \pi \\ & (135.13 \times 126.1133 \times \sqrt{2}) + 15360 - 7240.77343933 \\ & = 32219.8160082 / 10240 \\ & = 3.14646640705 \end{aligned}$$

$$\text{True } \pi = 3.14644660942$$

$$\text{Difference} = 0.00001979763$$

Guanine: Cytosine pairing and derivation of True π

$$\{(8 \times 512) \times (2+2) / (4 \times G \times C \times \sqrt{2}) + 512\} + 3 = \text{True } \pi$$

$$\begin{aligned} & \{(8 \times 512) \times (2+2) / (4 \times 151.13 \times 111.1 \times \sqrt{2}) + 512\} + 3 = \text{True } \pi \\ & = 13984.6187514 / 95493.6545206 + 3 = 3.14644552898 \end{aligned}$$

$$\text{True } \pi = 3.14644660942$$

$$\text{Difference} = 0.0000108044$$

Conclusion

The True π value equal to $14 - \sqrt{2}/4$ is derived from the structure of DNA molecule.

References

1. Tontarski, Karolyn L, Hoskins Kyle A, Watkins Tani G, and Brun-Conti Leanora, et al. "Chemical Enhancement Techniques of Bloodstain Patterns and DNA Recovery after Fire Exposure." *J Foren Sci* 54 (2009): 37-48.
2. Barni, Filippo, Lewis Simon W, Berti Andrea, and Miskelly Gordon M, et al. "Forensic Application of the Luminol Reaction as a Presumptive Test for Latent Blood Detection." *Talanta* 72 (2007): 896-913.
3. Quickenden, Terence I, and Cooper Paul D. "Increasing the Specificity of the Forensic Luminol Test for Blood." *J Biol Chem Luminescence* 16 (2001): 251-253.
4. Bergervoet, PWM, Riessen N Van, Sebens F W, and van der Zwet W C. "Application of the Forensic Luminol for Blood in Infection Control." *J Hospit Infect* 68 (2008): 329-333.
5. da Silva, Rafaela Rogiski, Agustini Bruna Carla, da Silva Andre Luis Lopes, and Frigeri Henrique Ravanhol. "Luminol in the Forensic Science." *J Biotechnol Biodiver* 3 (2012): 172-177.

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