How to replicate the atomic sequence of DNA/ DNA の原子配列を複製するメカニズム

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Clarifying the process by which DNA is formed will lead to the elucidation of the origin of life. The birth of life was first caused by the creation of proteins in a random process. Amino acids of the same chirality are linked together to form protein molecules. The method of replicating a molecule of a protein element is to use an enantiomer (mirror image), where one of the amino acids that can be used as a template to replicate the other. Therefore, the strands that connect the two spiral amino acid strings that form each amino acid pair are shifted upside down from each other. At the point of synthesis, it is paired according to the relationship between the mold of replica and the product, however the binding force is weak. As shown in Figure1, if there exist complementarity pairs bonded by hydrogen bonds at neighboring paired bases, the molecular sequence of the pair will be stabilized by exchange of partner. When the double helical structure is separated into two helical molecules, it returns to the original enantiomer relationship due to cancel of hydrogen bond, and replication is able to take place. In the double helix structure, of which complementary coupling is cut-offed, amino acid units of proteins can be replicated due to the relationship of enantiomers. Amino acid molecules have side chains (R groups), which are attached to the hydrocarbon molecular layer of the cell membrane. The proteins produced by attaching to the cell membrane make it stronger. When a chain reaction occurs in the cell membrane, proteins affected by the chain reaction can also cooperate with the cell membrane to become enzymes. The number of cells with proteins that are advantageous for these vital activities increased.

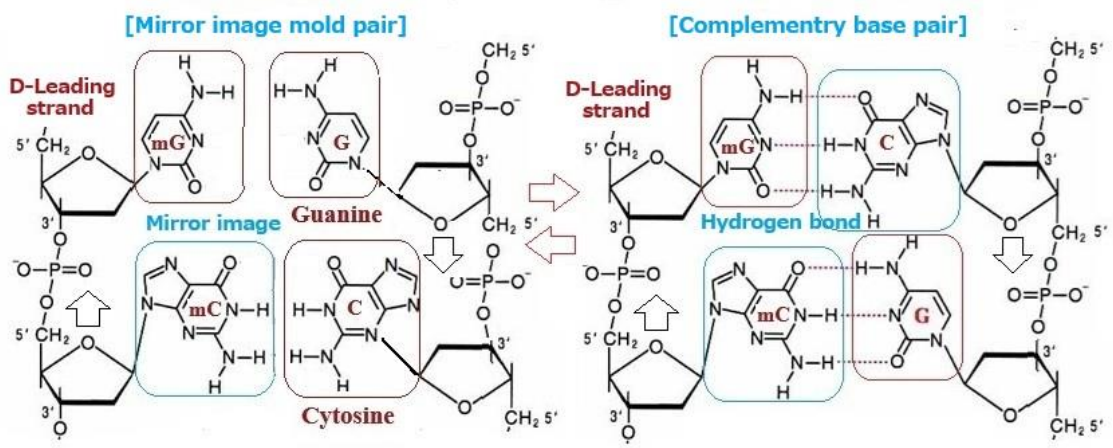

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Fig.1 Conversion between mirror image mold pair and complementary base pair on [G-C] in DNA