# A New Sense of Gene Expression

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Can cancer be cured by altering the cancer associated gene? By trying to answer the question the author finds difficulties because the current research of gene expression focuses on the information transition from DNA to protein while the cancer associates life information changes on DNA, i.e. the gene mutation with DNA expression changes. So, the current research does not involve the cause of the cancer in studying. Fortunately, a Christmas gift made the author a new sense of gene expression to answer this question "completely possible" by studying gene expression under the new sense, i.e. studying the life information changes on DNA, the cause of gene mutation. So the studying involves the cause of cancer in research. The new sense is briefly illustrated in Figure 1.

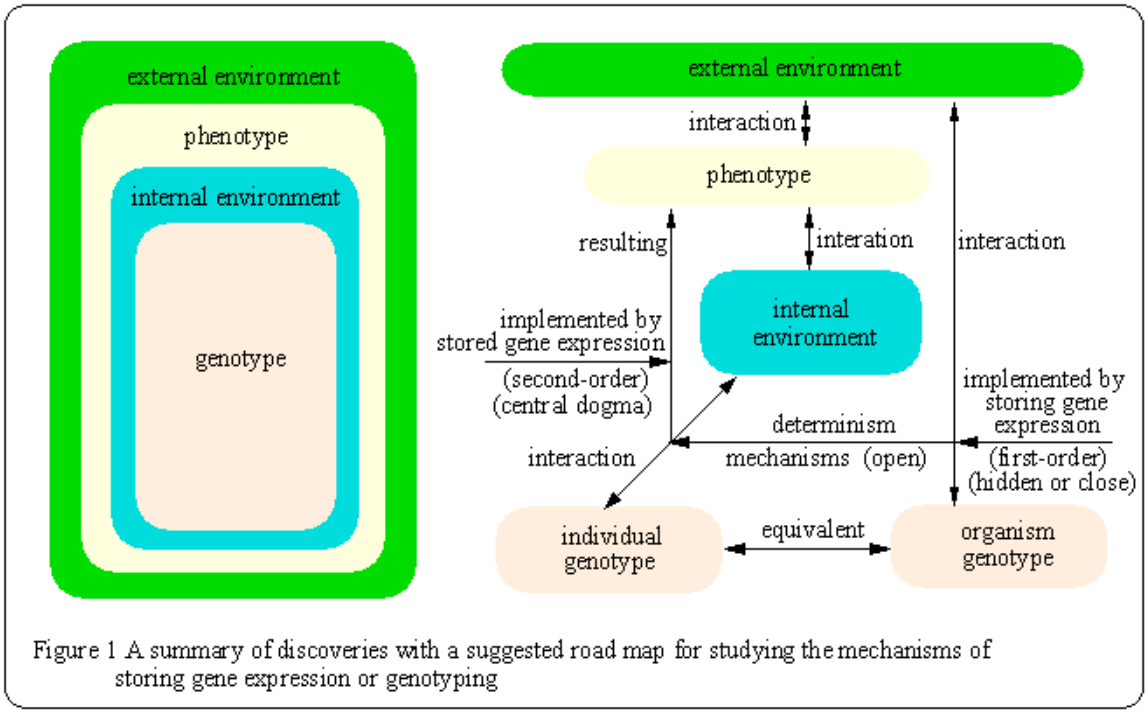


Figure 1 A summary of discoveries with a suggested road map for studying the mechanisms of storing gene expression or genotyping

The key of the new sense is to distinguish the life information from its bio-carrier expression. The distinguishing is to divide gene expression into two orders or two stages. The first-order is to express the organism life information of gene on its bio-carrier, such as DNA. The second-order is following the first-order to express the gene information by transiting the information from DNA to protein for phenotyping the life physical characters.

The author named the first-order expression as *storing gene expression* because it is the storing life information on its bio-carrier. The second-order expression is named as *stored gene expression* because it is the transition of the information stored on DNA to protein. The storing gene expression is also called as genotyping because it is typing the gene on its bio-carrier while the stored gene expression is also called as phenotyping because it is transiting the genotype on DNA to the protein for phenotyping the characters of life. Obviously, the storing gene expression involves the cause of DNA expression changes. So it deals with the cause of cancer and provides a way for curing cancer by altering the cancer associated gene while the research of stored gene expression is difficult to find a way for such kind of therapy.

By taking a review the author finds the new sense is supported by the natural facts and the natural evidences showed in human research *(1-3)*, but the sense is not sorted out. By reviewing the natural facts and evidences the author finds the storing gene expression is closed by the organism determinism while the mechanisms of storing gene expression for performing the expression are open. This scenario is similar to that it is closed, no way, to investigate why the life information expression is using DNA not other components, but the DNA expression is open for investigation. So the reason of “why” causing cancer is no way to investigate, but the procedure of “how” causing the cancer could be investigated for finding out the ways of intervening the “how” procedure for curing cancer. By analysis of natural evidences the author hypothetically proposes that the mechanisms of storing gene expression could be contained within the mechanism of DNA supercoiling-unwinding. So, investigating the mechanisms of storing gene expression could be studied by investigating the mechanism of DNA supercoiling-unwinding. Based on the hypothesis the author proposes a paradigm with an informatics approach for implementing the investigation by using the data derived from current researches and generated from the investigations.

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**Reference**

1. P.C. Winter, G.I. Hickey, H.L. Fletcher, Instant Notes in Genetics (BIOS Scientific Publishers Limited, United Kingdom, 1998), pp. 6, 8, 10, 44.

2. A. Mackenzie, A. S. Ball & S. R. Virdee, Instant Notes in Ecology (BIOS Scientific Publishers Limited, United Kingdom, ed. 2, 2001), pp. 5-6, 11. [Second edition]

3. T. A. Brown, Gene Cloning and DNA Analysis: An Introduction (Blackwell Publishing, Oxford, 2001), pp. 57.

4. D. R. Westhead, J. H. Parish & R. M. Twyman, Instant Notes in bioinformatics (BIOS Scientific Publishers Limited, United Kingdom, 2002), pp. 97 - 112.