Conclusion

The structure for DNA proposed by Watson and Crick

brought forth a number of proposals as to how such a

molecule might replicate. These proposals make specific

predictions concerning the distribution of parental atoms

among progeny molecules. The results presented here give a

detailed answer to the question of this distribution and

simultaneously direct our attention to other problems whose

solution must be the next step in progress toward a complete

understanding of the molecular basis of DNA duplication.

What are the molecular structures of the subunits of E. coli

DNA which are passed on intact to each daughter molecule?

What is the relationship of these subunits to each other in a

DNA molecule? What is the mechanism of the synthesis and

dissociation of the subunits in vivo?

*结论：*Watson 和 Crick提出的DNA结构给解释DNA如何复制带来了一些假说。这些假说对亲代原子如何在子代分子中分布作了具体的预测。此处给出的结果对分布问题作了具体的解答，并把我们的注意力引向其他问题。找到这些问题的解决方案是在完全理解DNA复制的分子基础过程中的下一步。大肠杆菌完好地传给子代分子的亚单元的分子结构是什么？在DNA分子中这些亚单元彼此的关系是什么？体内合成、分解亚单元的机制是什么？

Summary

By means of density-gradient centrifugation, we have

observed the distribution of N15

among molecules of

bacterial DNA following the transfer of a uniformly N15 -

substituted exponentially growing E. coli population to N14

medium. We find that the nitrogen of a DNA molecule is

divided equally between two physically continuous subunits;

that, following duplication, each daughter molecule

receives one of these; and that the subunits are conserved

through many duplications.

在将含均匀的N15亚单元的以指数增长的大肠杆菌转移到N14介质中后，通过密度梯度离心，我们观察到在细菌DNA分子间的N15分布。我们发现：DNA分子中的氮被平分到两个物理上连续的亚单元上；复制后，每个子代分子得到一个亚单元；以及亚单元在许多次复制过程中是保守的。