

<<生物化学>>

图书基本信息

书名：<<生物化学>>

13位ISBN编号：9787117108249

10位ISBN编号：711710824X

出版时间：2009-3

出版时间：魏晓东 人民卫生出版社 (2009-03出版)

作者：魏晓东 编

页数：343

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### 内容概要

《生物化学》是双语教材，总结多年教学中沉淀的经验，按照医学各专业的特点，将生物化学划分为生物大分子的结构与功能、物质代谢、基因表达和专题篇4个部分，努力构建系统化课程，从学生兴趣、认知规律和探究方便出发合理设计教材的结构，注意联系实际，适度扩大学生的知识面和应用能力，突出教材中知识结构的科学化。

并以鲜活灵动的色彩、图文并茂的版面、熟悉的例子吸引刚入门的医学生，让学生感受课程学习的趣味性和挑战性，将是一系统性强、可读性强、深受学生喜爱的教材。

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插图：which is a destabilizing influence. As a result, helices are often capped at the N-terminal end by a negatively charged amino acid (like glutamic acid) in order to stabilize the helix dipole. Less common (and less effective) is C-terminal capping with a positively charged amino acid like lysine. This is because of a structural coincidence: The diameter of the  $\alpha$ -helix is 120 nm, the same as the width of the major groove in B-form DNA.

2.2.2  $\beta$ -pleated sheet After the discovery of helix, Panling and Corey discovered that polypeptide chains could fold in another way, which they named beta-pleated sheet (beta is second, alpha was first). The  $\beta$  sheet (also called  $\beta$ -pleated sheet) is a commonly occurring form of regular secondary structure in proteins, first proposed by Linus Panling and Robert Corey in 1951. The  $\beta$ -pleated sheet is composed of two or more straight chains that are hydrogen bonded side by side (Fig. I-9). If the amino termini are on the same end of each chain, the sheet is termed parallel, and if the chains run in the opposite direction (amino termini on opposite ends), the sheet is termed antiparallel. In this case more H-bonding is achieved by stretching out the polypeptide chain, and laying it side by side to form H-bonds between lengths of polypeptide chain. Thus providing both inter and intra-H bonds. The structure is called a beta-pleated sheet because of the serrated zig appearance when viewed from the side. Substantially different from the  $\alpha$ -helix in that it is a sheet rather than a rod and polypeptide chain is fully stretched rather than tightly coiled as in helix. The H-bonds are formed from amino and carboxyl groups as for  $\alpha$ -helix, but bonding also occurs between different strands of a polypeptide. The strands can run in opposite directions to give antiparallel beta-pleated sheets or they can run in the same direction to give parallel beta-pleated sheets. Beta sheets occur in variable amounts in the polypeptide chains of globular proteins.

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