

comment

such disparate results, it is reasonable to ask what is the most accurate description of the structure. Of the many DNA parameters, the length of the helix as reflected in the helical rise is one that is easily understood and confirmed. A Patterson map calculated with the crystal structure of $d(GGCGm^5CC)_2$ placed into a *PI* unit cell (to eliminate crystal lattice effects) shows a regular and repeating set of base pair planes separated by 3.6 Å. This measure of the intrinsic average helical rise is independent of how the helix axis is defined, which is where the various DNA analysis programs

differ. In addition, the $d(GGCGm^5CC)_2$ conformation is seen to be extended by ~7% overall when directly compared to a standard B-DNA helix with a 3.4 Å rise. Therefore, the $d(GGCGm^5CC)_2$ structure is an extended double helix as we had originally concluded¹. Since no comparable independent measure of other helical parameters exists, we rely on the analysis that best reflects the intrinsic rise as the most accurate description of this helix.

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history

More than just a protein folder

Most biochemists and structural biologists are probably familiar with the work of Christian B. Anfinsen on ribonuclease, but fewer may know about the wide range of his scientific and social activities. For those interested, this situation can now be easily remedied by a visit to the National Library of Medicine's Profiles in Science web site (<http://www.profiles.nlm.nih.gov/>), which presents an archival collection of many biographical summaries, research papers, photographs, and correspondences of Anfinsen.

The purpose of the Profiles in Science site is to provide an electronic museum for scientists and students of the history of science. The project was launched in 1998, with a collection describing the life and work of Oswald T. Avery. Since then, the curators have added profiles of Joshua Lederberg (whose shared the Nobel Prize in Physiology or Medicine in 1958 for his work on genetic recombination), Martin Rodbell (who shared the Nobel Prize in Physiology or Medicine in 1994 for his research on G-proteins and signal transduction), Julius Axelrod (who shared the Nobel Prize in Physiology or Medicine in 1970 for his work on neurotransmitters),

and most recently, of Anfinsen (who shared the Nobel Prize in Chemistry in 1972).

Throughout his career, Anfinsen was affiliated with a number of different institutions, including Harvard University, the National Institutes of Health in the USA, and The Johns Hopkins University. One section of the exhibit takes the visitor through Anfinsen's scientific career, loosely categorized by location and subject. His work on protein folding and the thermodynamic hypothesis (for which he won the Nobel Prize) is featured, along with summaries of his research on molecular engineering, affinity chromatography, interferon and thermophilic bacteria. Links to original research papers, monographs, and photographs make these sections lively and informative.

However, the aspect that distinguishes this site as an archive is that it allows visitors to learn not only about the science, but also about the person. For example, from a collection of correspondences (in PDF form) to and from Anfinsen, we learn that he was quite outspoken on issues important to him. Many of his letters are addressed to foreign officials in countries such as Brazil, Turkey and the former

Soviet Union. These letters implore those government officials to put a stop to the repression of scientific and political ideas and to improve the safety and working conditions of scientists in their countries. The collection of letters also indicates that Anfinsen was in favor of nuclear disarmament. In addition, he was (along with many others) critical of the human genome project and, we learn from biographical sketches in the exhibit, that he also chastised government officials in the USA for supporting other policies that he felt would unfairly siphon funding away from basic research.

This rare opportunity to rummage through the filing cabinet of a well-respected scientist also yields other, somewhat more personal insights. We learn that Anfinsen was an avid sailor, was apparently deeply philosophical (he converted to Orthodox Judaism, from self-proclaimed agnosticism, in his early 60s) and was also a loyal friend to many. Hopefully, we can look forward to the addition of many more exhibits to the Profiles in Science site, ones that will have the same candor and depth as that of the Anfinsen collection.

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