

2003 Department of Biochemistry Axelrod Lectures

Research Summary

The principal focus of Dr. Kent's laboratory is to understand the chemical basis of protein function, particularly enzyme catalysis. Their work centers on the design and synthesis of protein molecules with novel properties, especially integral membrane enzymes.

Dr. Kent's early work on chemical peptide synthesis was applied to the study of viruses such as hepatitis B and HIV. These efforts culminated in the use of protein prepared by total chemical synthesis for the determination of the original crystal structures of the HIV-1 protease molecule.

More recently, Stephen Kent pioneered a radically new approach to the total synthesis of proteins, based on the chemoselective reaction of unprotected peptide segments. This chemical ligation method has allowed physical organic chemistry to be applied to the world of proteins.

Monday, November 10
4:00pm, WTHR 104

*"Chemistry of the Molecules of Life –
Exploring a New Protein World
Limited only by the Imagination"*

Tuesday, November 11
4:00pm, LYNN 1-136

*"Dissecting the Molecular Basis of
Catalysis in the HIV-1 Protease"*



Stephen B. H. Kent
University of Chicago

Brief Biography

Dr. Kent began his career in New Zealand receiving his Bachelors of Science degree from the Victoria University of Wellington and his Master's of Science degree from Massey University. He then earned his Ph.D. in organic chemistry at the University of California, Berkeley in 1975.

Following his post-doctoral work in the laboratory of Dr. R. B. Merrifield at the Rockefeller University, Dr. Kent continued research there as an assistant professor until 1981. He has also held faculty positions at the California Institute of Technology, Bond University in Australia, and the Scripps Research Institute in California.

Currently Dr. Kent is a professor in the Departments of Biochemistry & Molecular Biology and Chemistry at the University of Chicago. He is also the director for the Institute for Biophysical Dynamics.

In addition to his academic achievements, he is the founder of two San Francisco Bay Area companies: CIPHERGEN Biosystems and Gryphon Therapeutics.

Dr. Kent has received numerous awards for his outstanding research. He was elected Fellow of the American Association for the Advancement of Science in 2000. He also received the Hirschmann Award in Peptide Chemistry from the American Chemical Society in 1994, and the Kaiser Award from the Protein Society in 2002.