



S. B. H. Kent

The author presented on this page has recently published his **10th article** in *Angewandte Chemie* in the last 10 years:

“Design, Total Chemical Synthesis, and X-Ray Structure of a Protein Having a Novel Linear-Loop Polypeptide Chain Topology”: K. Mandal, B. L. Pentelute, D. Bang, Z. P. Gates, V. Yu. Torbeev, S. B. H. Kent, *Angew. Chem.* **2012**, 124, 1510–1515; *Angew. Chem. Int. Ed.* **2012**, 51, 1481–1486.



The work of S. B. H. Kent has been featured on the cover of *Angewandte Chemie*:

“Design and Folding of [Glu<sup>A4</sup>(O<sup>β</sup>Thr<sup>B30</sup>)]Insulin (“Ester Insulin”): A Minimal Proinsulin Surrogate that Can Be Chemically Converted into Human Insulin”: Y. Sohma, Q.-X. Hua, J. Whittaker, M. A. Weiss, S. B. H. Kent, *Angew. Chem.* **2010**, 122, 5621–5625; *Angew. Chem. Int. Ed.* **2010**, 49, 5489–5493.

## Stephen B. H. Kent

<b>Date of birth:</b>	December 12, 1945
<b>Position:</b>	Professor of Chemistry, The University of Chicago
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<b>Education:</b>	1968 BSc, Victoria University of Wellington (New Zealand) 1970 MSc supervised by Prof. Richard (Dick) Hodges, Massey University (New Zealand) 1975 PhD supervised by Prof. Douglas T. Browne, University of California, Berkeley 1975–1978 Senior Research Associate with R. Bruce Merrifield, The Rockefeller University, New York
<b>Awards:</b>	<b>2002</b> E. T. Kaiser Award; <b>2004</b> Vincent du Vigneaud Award; <b>2009</b> Merrifield Award; <b>2010</b> Josef Rudinger Award; <b>2010</b> Akabori Award; <b>2011</b> Bader Award in Bioorganic Chemistry
<b>Current research interests:</b>	The chemical basis of protein function; design and construction of protein molecules with novel structures and properties; mirror-image protein molecules
<b>Hobbies:</b>	Distance running (when I was younger); red wine

### My favorite piece of music is ... La Bohème (Puccini).

**My best investment was ...** in the university education of our three children.

**The most exciting thing about my research is ...** seeking to understand why different scientific ideas are accepted or rejected by the worldwide research community.

**The most significant scientific advance of the last 100 years has been ...** the transport of intact protein molecules into the gas phase, and their study in that state by physical methods including mass spectrometry.

**I chose chemistry as a career because ...** I wanted to understand, in the most fundamental terms, the chemical basis of enzyme catalysis. That led to the desire to be able to design and build enzyme molecules using chemistry.

**The best advice I have ever been given is ...** to work at the lab bench for as long as possible—by Bruce Merrifield; in my case I was able to do research with my own hands until I was 48 years old.

**My most exciting discovery to date has been ...** the chemical ligation principle, which has enabled the practical total synthesis of protein molecules.

**My greatest achievement has been ...** to run 10 miles in 49 minutes 40 seconds (I was 20 years old), winning the race in a “dip finish” at the tape!

**My favorite novel is ...** “To Kill a Mockingbird” by Harper Lee; this is a perfectly crafted novel, which is surely why she only published the one work.

### My 5 top papers:

1. “Constructing proteins by dovetailing unprotected synthetic peptides: backbone-engineered HIV protease”: M. Schnölzer, S. B. Kent, *Science* **1992**, 256, 221–225. (Enunciation of the chemical ligation principle for the total synthesis of proteins.)
2. “Weighing naked proteins: practical, high-accuracy mass measurement of peptides and proteins” B. T. Chait, S. B. Kent, *Science* **1992**, 257, 1885–1894. (Description of the new mass spectrometry methods that are essential for the practical total chemical synthesis of proteins.)
3. “Synthesis of proteins by native chemical ligation”: P. E. Dawson, T. W. Muir, I. Clark-Lewis, S. B. Kent, *Science* **1994**, 266, 776–779. (Thioester-mediated, amide-forming chemo- and regioselective covalent condensation of unprotected peptide segments.)
4. “Design and Chemical Synthesis of a Homogeneous Polymer-Modified Erythropoiesis Protein”: G. G. Kochendoerfer et al., *Science* **2003**, 299, 884–887. (Preparation of a designed glycoprotein mimetic of 50825 Da with enhanced biological properties—the ultimate achievement to date in the total chemical synthesis of proteins.)
5. “Design and Folding of [Glu<sup>A4</sup>(O<sup>β</sup>Thr<sup>B30</sup>)]Insulin (“Ester Insulin”): A Minimal Proinsulin Surrogate that Can Be Chemically Converted into Human Insulin”: Y. Sohma, Q.-X. Hua, J. Whittaker, M. A. Weiss, S. B. H. Kent, *Angew. Chem.* **2010**, 122, 5621–5625; *Angew. Chem. Int. Ed.* **2010**, 49, 5489–5493. (Until this work was reported, an efficient total chemical synthesis of insulin had eluded the organic community for forty years.)

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