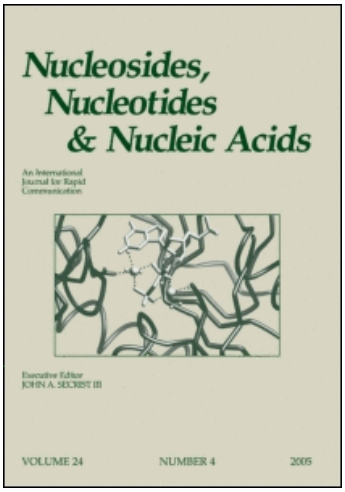

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Introduction: A 70th Birthday Tribute to Eiko Ohtsuka

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INTRODUCTION: A 70TH BIRTHDAY TRIBUTE TO EIKO OHTSUKA

Professor Eiko Ohtsuka

I first saw Professor Eiko Ohtsuka at a party held in the Faculty of Pharmaceutical Sciences, Hokkaido University in 1984 when I was an undergraduate student. She gave a speech at the party as a new professor. I did not realize that this impressive woman was a very famous scientist. Next year, I joined her laboratory and began a journey of scientific discovery under her caring mentorship.

Professor Eiko Ohtsuka was born in Sapporo City, Hokkaido, Japan, on January 13, 1936, and received her B.A. from Hokkaido University in 1958. She received her Ph.D. under Professor Yoshihisa Mizuno, one of the early pioneers in the field of nucleic acids chemistry in Japan, in 1963 at Hokkaido University. She collaborated with Professors Yuji Tonomura and Morio Ikehara in studies of ATP analogs for muscle contraction studies. She then joined Professor Har Gobind Khorana's group as a postdoctoral fellow at the University of Wisconsin to work on synthesis of nucleic acids for the genetic code. I have heard of Professor Khorana's gratitude for her great contribution to the elucidation of the genetic code at that time. Professor Khorana, of course, went on to win the Nobel Prize. She then joined Professor Ikehara's group as an associate professor at Osaka University and worked on total syntheses

Professor E. Ohtsuka, Osaka days, 1972

of tRNAs and the human growth hormone gene. She became a professor of bioorganic chemistry at the Faculty of Pharmaceutical Sciences, Hokkaido University, the same school from which she had graduated, in 1984.

Professor Ohtsuka promoted research in a variety of areas at Hokkaido University. These areas involve synthetic approaches of structure-function relationship of catalytic RNAs (ribozymes) and site-specific cleavage of RNAs by ribozymes or by combination of 2′-*O*-methyl-RNA/DNA chimeric oligonucleotides and RNase H. She also worked on total synthesis of human c-Ha-*ras* and T4 endonuclease V genes, which were used for determination of the three-dimensional structures of their encoding proteins. Additionally, she promoted research on synthesis of oligodeoxyribonucleotides containing DNA damages as 7,8-dihydro-8-oxo-guanine (8-hydroxyguanine) and

Professor E. Ohtsuka (1st row, center), at a party for her 60th birthday and reception of the Japan Academy Prize, 1996

Professor E. Ohtsuka (1st row, 2nd from left), with students at a graduation ceremony, 1992

Professor E. Ohtsuka (right), on a ski trip in Furano with members of Professor Ikehara's lab, 1967

Professors Khorana and Ohtsuka on the top of Mt. Kurodake, on the occasion of Professor Khorana's visit to Sapporo, 1996

cyclobutane thymine-thymine photodimer. These damaged DNA fragments were used for elucidation of molecular mechanisms of mutations induced by chemical modification of DNA and for studies of DNA repair enzymes. Single-chain antibody proteins recognizing photo-damaged DNAs were also produced and the recognition modes of the antibodies were determined. Her research was in biochemistry and molecular biology based on synthetic nucleic acids.

After her retirement from Hokkaido University in 1999, she worked as a researcher/fellow at the National Institute of Advanced Industrial Science and Technology. Now she works as an inspector general for Hokkaido University.

Professor Ohtsuka has published approximately 400 original research papers. She received awards from the Pharmaceutical Society of Japan in 1973 and 1994 and the 20th anniversary award of the Princess Takamatsu Cancer Research Fund in 1989. She also received the Japan Academy Prize in 1996.

Professor Ohtsuka is not only an excellent scientist but also a thoughtful and decent person. She is very kind and took care of students well. She sometimes brought food and drinks to the laboratory for students. I would guess that her tenderness was given to her previous superiors, Professors Khorana and Ikehara and the late Professor Mizuno. She likes to ski and play tennis very much. We enjoyed ski and tennis with her on our laboratory trips. As an athlete, she was and continues to be a great competitor. I was happy that I had the opportunity to catch a glimpse of her success.

In closing, Happy Birthday Professor Ohtsuka! I do hope that she will take great care of herself and that she will continue to advise our research.

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