

CURRICULUM VITAE

Name: Birgitte Munch-Petersen (female)
 Date and place of birth: 14-3-1943, Copenhagen, Denmark.
 Marital status: 1. marriage 1963 to Claus Munch-Petersen (died 1979), 3 children born 1963, 1971 and 1971
 2. marriage 1989 to Buster Bruun

ACADEMIC CAREER

1974 Graduate from University of Copenhagen in Biochemistry: Naturvidenskabelig embedseksamen. Thesis: Nucleic acid metabolism, under the supervision of Prof. H. Klenow.
 1996 Doctor of Science (Dr. Scient.): *DNA precursor pool balance and thymidine kinase isoenzymes in normal and malignant cells. Enzymatic regulation mechanisms and clinical therapeutic applications*
 Opponents: Prof. H. Klenow, University of Copenhagen, and Prof. G. McKenna, University of Ulster, Northern Ireland, UK.
 1997-02 Visiting Professor at Faculty of Science, University of Ulster, Northern Ireland, UK.
 2003- Professor in Molecular Biology, Roskilde University, Department of Life Sciences and Chemistry.
 2006 Guest researcher at Lund University, 1.9-31.12 2006, funded by the Wennergren Foundation
 2008 Guest researcher at Lund University, 1.9-31.12 2008, funded by the Wennergren Foundation

EMPLOYMENTS

1974-78 Fellowship from University of Copenhagen at the Panum Institute, Biochemistry Institute B and C.
 1978-81 Fellowship from The Danish Cancer Society, at the Panum Institute, Biochemistry Institute C.
 1981-85 Fellowship at the Finsen Laboratory, Finsen Institute, Copenhagen.
 1985 Associate professor at Roskilde University, Denmark, Department of Life Sciences and Chemistry.
 1988-89 Guest researcher at The Medical Nobel Institute, Department of Biochemistry I, the Karolinska Institute, Sweden, (12 months).
 1989-03 Associate professor at Roskilde University, Denmark, Department of Life Sciences and Chemistry
 2003 Professor in Molecular Biology, Roskilde University, Department of Life Sciences and Chemistry
 2006 Guest Researcher at Department of Molecular Genetics, Lund University, Sweden

HONORARY OFFICES AND COMMITTEES

1997- Member of the Senate at Roskilde University
 1998- Chairman of the Structural-Chemistry group for Biotechnological PhD courses of the Universities at Sjælland.
 2001- Member of the Scientific Committee of ESSPPM (European Society for the Study of Purine and Pyrimidine Metabolism in Man: <http://amedec.amg.gda.pl/~essppmm/index.html>)

SCIENTIFIC FOCUS AREA**Research interests**

Protein structure- function relationship, evolution and biodiversity of cytosolic and mitochondrial deoxynucleoside kinases. DNA repair and DNA precursor pool balance and mitochondria. Deoxynucleotide salvage enzymes (thymidine kinases) and cancer. Protein structure- function relationship of deoxynucleoside kinases. Deoxynucleoside phosphorylating enzymes in lower vertebrates.

Academic staff at Roskilde University: Birgitte Munch-Petersen, Associated Professor in Molecular Biology. Lene Juel Rasmussen, Associated Professor in Molecular Biology. Tine Skovgaard and Claus Desler (Ph.D students); Mesut Bilgin, Louise Slot, Nicolai Balle Larsen (master students).

International collaboration

Cloning, characterisation, genetic optimization and structural characterisation and biotechnological applications of non-vertebrate deoxynucleoside kinases. Professor Jure Piskur, Lund University, Sweden and CEO Zoran Gojkovic, ZGene A/S, Lyngby, Denmark.

Characterisation of mammalian dNK genes:

Leif Søndergaard, Copenhagen University, Professor Jure Piskur, Lunds University, Sweden, Professor S. Eriksson, Swedish University of Agricultural Science, Uppsala, Sweden.

Physico-chemical studies of the pyrimidine salvage enzymes. Professor D. Shugar and Dr. Borys

Kierdaszuk, Department of Biophysics, University of Warsaw, Poland.

3D structure of human deoxythymidine kinase and 3D structural studies on structure-function relation of the multi-specific ultra-fast deoxynucleoside kinase from *Drosophila melanogaster*. Professor Hans Eklund BMC, Uppsala University.

Research training and supervision 1995-2008: Laboratory group leader (since 1985). Principal advisor for 3 PhD students; currently 1; Co-advisor for 4 graduated PhD students; currently 3; Advisor for 25 graduated Master of Science students; currently 6.

Organiser of the annual Biochemistry course and organiser/coorganiser of “advanced course in biotechnology and protein technology (experimental), and of Molecules of Life (theoretical and experimental)

REVIEWER FOR SCIENTIFIC JOURNALS 1999-08.

Referee for: *Journal of Biological Chemistry, European Journal of Biochemistry, Biochemical Journal, International Journal of Cancer, Microbiology, Biochemical Pharmacology, Biochim. Biophys. Acta, Archives of Biochemistry and Biophysics, Molecular pharmacology and Cancer Research.FEBS, Europ. J. Biochemistry. FEBS Journal. Enzyme and Microbial Technology. Gene Therapy.*

MAJOR SCIENTIFIC ACHIEVEMENTS

Demonstration of the correlation between the deoxynucleotide pool sizes and the DNA synthesis rate in human lymphocytes, and of the low pools in non-dividing lymphocytes

Identification, isolation, characterisation and cloning of the thymidine kinase isoenzyme, TK2, in human lymphocytes and demonstration of the substrate specific apparent negative cooperative kinetic properties

Demonstration of deviation in the enzymatic properties and expression of thymidine kinase 1 and 2 in human leukemic patients

Demonstration of the reversible effect of ATP on the oligomerisation and affinity of human thymidine kinase 1 and structural-functional studies

Demonstration of the stimulating effect of micromolar thymidine and of the negative effect of azidothymidine on the repair of UV-induced DNA damage)

Identification, isolation, cloning and enzymatic characterisation of a new, unique, multisubstrate deoxynucleoside kinase from cultured *Drosophila melanogaster* cells “Dm-dNK” ; The first 3D structure of a cellular deoxynucleoside kinase – the *Drosophila melanogaster* Dm- dNK, and structure-function studies

In 2001, the *Drosophila melanogaster* kinase was given its own EC number: EC 2.7.1.145 See:

<http://www.chem.qmw.ac.uk/iubmb/enzyme/EC2/0701c.html#145>

The first and unique 3D structure of a thymidine kinase 1, fundamentally different from all other known deoxyribonucleoside kinases and with a new motif - the lasso domain.