

## *MARIA KONTOU*

### **POSITIONS & EDUCATION**

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**2005-Today:** Lecturer of Clinical Chemistry, Department of Biochemistry and Biotechnology, University of Thessaly, Larissa, Greece.

**2002-2004:** Research Associate, "Alexander Fleming" Biomedical Sciences Research Center, Athens, Greece

**2002-2005:** Teaching Assistant Lecturer, Department of Biochemistry and Biotechnology, University of Thessaly, Larissa, Greece.

**2000-2001:** Postdoctoral Research Associate, Institute of Molecular Biology & Biotechnology, Heraclion, Crete, Greece

**1999-2000:** Postdoctoral Research Associate, Department of Biochemistry and Molecular Biology, University of Florida, Gainesville, Florida, USA

**1998-1999:** Postdoctoral Research Associate, Department of Biological Sciences, University of Warwick, U.K

**1998:** Ph.D. in Biochemistry, University of Patras, Department of Biochemistry, School of Chemistry, Patras, Greece.

**1991:** B.Sc. in Chemistry, University of Athens, Athens, Greece.

### **RESEARCH**

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- Design of potential antidiabetic drugs: Kinetic and Crystallographic studies of  $\alpha$ -D-glucose inhibitors of glycogen phosphorylase. In collaboration with Dr. N.G. Oikonomakos, Institute of Biological Research and Biotechnology, National Hellenic Research Foundation, Greece and Prof. L.N. Johnson, Laboratory of Molecular Biophysics, University of Oxford
- Biochemical and crystallographic studies of monoclonal antibodies against the human muscle Acetylcholine Receptor. In collaboration with S.J.Tzartos, Department of Biochemistry, Hellenic Pasteur Institute, Greece and Prof. K.R. Acharya, Department of Biology and Biochemistry, University of Bath, UK.
- Structural studies of allotropic variants of minute virus of mice (MVM). In collaboration with Dr. Mavis Agbandje-McKenna, Department of Biochemistry and Molecular Biology, University of Florida, Gainesville, Florida, USA and Prof. J.Almendral, Universidad Autonoma de Madrid, Spain.

- Structural and biochemical studies of molecular mechanisms of plants - pathogens interaction. In collaboration with Dr. F.Ververides, Institute of Molecular Biology and Biotechnology, Plant Molecular Biology Lab, Heraclion, Greece.
- Pharmacokinetic and pharmacogenomic studies of immunosuppressant substances rapamycin and mycophenolic acid in greek transplanted patients. ). In collaboration with G.Panayotou, “Alexander Fleming” Biomedical Sciences Research Center, Athens, Greece and Wyeth Pharmaceuticals

## **RESEARCH AND ACADEMIC GRANTS**

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Ministry of Development  
 General Secretariat of Research and Technology  
 PENED 95

## **FELLOWSHIPS**

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National Hellenic Research Foundation, Ph.D. fellowship

European Molecular Biology Organisation (EMBO) short term fellowship

British Biomedical Sciences Research Council (BBSRC) post-doctoral research assistant fellowship

Institute of Molecular Biology & Biotechnology (IMBB) post-doctoral research fellowship

N.A.T.O. Fellowship for the International Summer School on Molecular and Cellular Biology (1995, Spetsai, Greece).

## **SCIENTIFIC SOCIETIES**

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Hellenic Society of Molecular Biology and Biochemistry  
 Hellenic Society of Clinical Chemistry and Clinical Biochemistry  
 British Crystallographic Association  
 Hellenic Society of Chemistry

## **COLLABORATIONS**

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Prof. G. Simos, University of Thessaly, School of Medicine.

Dr. G. Panayiotou, “Alexander Fleming” Biomedical Sciences Research Center, Athens, Greece

Dr. G. Nounesis, Institute of Radioisotopes & Radiodiagnostic Products, National Research Center “Demokritos”

Dr. S.Pournaras, University of Thessaly, School of Medicine.

## PUBLICATIONS

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1. Tsirkone, V.G., Dossi, K., Drakou, C., Zographos, S.E., **Kontou, M.**, and Leonidas, D.D. (2009). Inhibitor design to Ribonuclease A: The binding of two 5' phosphate uridine analogues. *Acta Crystallogr. F*, 65, 671-677 .
2. Kottakis F, Befani C, Asiminas A, **Kontou M**, Koliakos G, and Choli-Papadopoulou T (2009) The C-terminal Region of HPNAP Activates Neutrophils and Promotes Their Adhesion to Endothelial Cells. *Helicobacter*, 14, 177-179.
3. **Kontou M**, Pournaras S, Kristo I, Ikonomidis A, Maniatis AN, and Stathopoulos C (2007) Molecular cloning and biochemical characterization of VIM-12, a novel hybrid VIM-1/VIM-2 metallo-beta-lactamase from a *Klebsiella pneumoniae* clinical isolate, reveal atypical substrate specificity. *Biochemistry*, 46, 13170-13178.
4. **Kontou, M**, Govindasamy, L, Nam, H, Bryant,N, Llamas-Saiz,A, Foces-Foces,C, Hernando,E, Rubio,M, McKenna,R, Almendral,J, and Agbandje-McKenna,M (2005): Structural determinants of tissue tropism and in vivo pathogenicity for the murine parvovirus Minute Virus of Mice, *Journal of Virology*, 79 (17), 10931-10943
5. Poulas, K., Eliopoulos E., Vatzaki, E.H., Navaza, J., **Kontou, M.**, Acharya, K.R., Oikonomakos, N.G & Tzartos, S.J. (2001) Crystal structure of Fab198, an efficient protector of Acetylcholine Receptor against myasthenogenic antibodies. *Eur. J. Biochem*, 268, 3685 - 3693.
6. Agbandje-McKenna,M, **Kontou, M**, Llamas-Saiz,A, Foces-Foces,C, Hernando,E, Almendral,J, Rubio,M, McKenna,R (2000): Structural studies on tissue tropism and in vivo pathogenicity for the murine parvovirus Minute Virus of Mice. *Infect Dis Rev*;2(3):135-177
7. **Kontou, M.**, Leonidas, D.D., Vatzaki, E.H., Acharya, K.R., Mamalaki, A., Oikonomakos, N.G & Tzartos, S.J.. (1998). The crystal structure of a Fab fragment of a rat monoclonal antibody against the Main Immunogenic

Region of the human muscle Acetylcholine Receptor. *Eur. J. Biochem.*, 267, 2389-2396

8. **Kontou, M.**, Vatzaki, E.H., Kokla, A., Acharya, K.R., Oikonomakos, N.G & Tzartos, S.J.. (1996). Characterization, Crystallization and Preliminary X-ray Diffraction analysis of a Fab fragment of a Rat monoclonal antibody with very high affinity for the human muscle Acetylcholine Receptor. *FEBS Letters* 389, 195-198
9. Oikonomakos, N.G., **Kontou, M.**, Zographos, S.E., Koutra, D.D., Watson, K.A., Johnson, L.N., Bichard, C.J.F., Fleet, G.W.J. & Acharya, K.R. (1995).  $\beta$ -N-acetyl-gluco-pyranosylamine: a potent T-state inhibitor of glycogen phosphorylase. A comparison with  $\beta$ -D-glucose. *Protein Science* 4, 2469-2477.
10. Watson, K.A., Mitchell, E.P., Johnson, L.N., Cruciani, G., Son, J.C., Bichard, C.J.F., Oikonomakos, N.G., **Kontou, M.** & Zographos, S.E. (1995). Glucose analogue inhibitors of glycogen phosphorylase: From crystallographic analysis to drug prediction using GRID force-field and GOLPE variable selection. *Acta Crystallographica D* 51, 458-472.
11. Oikonomakos, N.G., **Kontou, M.**, Zographos, S.E., Tsitoura, H.S., Johnson, L.N., Watson, K.A., Mitchell, E.P., Fleet, G.W.J., Son, J.C., Bichard, C.J.F., Leonidas, D.D. & Acharya, K.R. (1994). The design of potential antidiabetic drugs: experimental investigation of a number of  $\beta$ -D-glucose analogue inhibitors of glycogen phosphorylase. *Eur. J. Drug Metab. Pharmacokinet.* 3, 185-192.
12. Watson, K.A., Mitchell, E.P., Johnson, L.N., Son, J.C., Bichard, C.J.F., Fleet, G.W.J., Oikonomakos, N.G., Leonidas, D.D., **Kontou, M.** and Papageorgiou, A.C. (1994). Design of inhibitors of glycogen phosphorylase: A study of  $\alpha$ - and  $\beta$ -C-glucosides and 1-thio- $\beta$ -D-glucose compounds. *Biochemistry* 33, 5745-5758

#### ABSTRACTS IN INTERNATIONAL CONFERENCES

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- 10th Balkan Biochemical and Biophysical Days, Varna, Bulgaria, May 1993. ' $\beta$ -N-acetyl-gluco-pyranosylamine: a potent T-state inhibitor of glycogen phosphorylase'.

- 4th European Workshop on Crystallography of Biological Macromolecules, Como, Italy, May 1995. Title of poster presentation: «Crystallization and preliminary crystallographic study of the Fab fragment of a monoclonal antibody against the nicotinic Acetylcholine Receptor».
- «Biomolecular recognition», NATO, EMBO, FEBS, Advanced Study Institute, Island of Spetsai, Greece, September 1998: «Biochemical and crystallographic analysis of a monoclonal antibody against the human muscle Acetylcholine Receptor».
- 2<sup>nd</sup> Parvovirus Euroconference, HEALTH BENEFITS AND RISKS FROM PARVOVIRUS INFECTIONS, June 17-20 1999, Granada, Spain.: X-ray structure of parvovirus minute virus of mice virus-like particles.
- International Congress of Crystallography, 4-13 August 1999, Glasgow, UK: The allotropic determinants of minute virus of mice
- VIIIth Parvovirus Workshop, June 28th - July 2nd, 2000 Mont Tremblant, Quebec, Canada: Structural determinants of tissue tropism and in vivo pathogenicity for the murine parvovirus Minute Virus of Mice
- 30th Annual Meeting of the Population Approach Group in Europe, 17-18 June, 2004, Uppsala, Sweden: The cytochrome P450 3A1 variant genotype shows correlation with the true clearance in a renal transplant population.

## **WORKSHOPS**

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Crystallogenesi s of Biological Macromolecules, ESF Workshop, Grenoble, France, April 1993.

Protein structure, Function and Design, FEBS, EMBO, NATO Summer School, Island of Spetsai, Greece, September 1993.

Molecular Mechanisms of Transcellular Signaling: From the Membrane to the Gene, NATO, FEBS, Advanced Study Institute, Island of Spetsai, Greece, August 1997.

Macromolecular Crystallography, ESF Course, Heraclion, Crete, Greece, November 1994.

Refinement Techniques and Map Interpretation, EMBO Practical Course, EMBL, Heidelberg, Germany, July 1996

CCP4 study weekend: DATA COLLECTION AND PROCESSING, 8-9 January  
1999, University of Sheffield,