

Georgia Chatzinikolaou

Biologist, PhD

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Date of birth: 5 January 1980
Nationality: Greek

EDUCATION

Dec 2005 - Jul 2009 **PhD**, Laboratory of **Histology-Embryology**, School of Medicine,
University of Crete
Grade of graduation: **Excellent**
Title: Effect of growth factors on the synthesis of proteoglycans-glycosaminoglycans in human
colon cancer cell lines

Brief description of thesis work: The synthesis and cell distribution of endogenous glycosaminoglycan chains, and their role on the proliferation of human colon cancer cells lines was examined. The effect of exogenously added glycosaminoglycans was also studied on human colon cancer cells lines, as well as the possible involvement of growth factors' (EGF, bFGF) and MAPKs signaling on heparin-induced colon cancer cell growth.

Sep 2002 – Nov 2005 **BSc in Biology**, School of Biology, Aristotle University of Thessaloniki
Grade of graduation: 7,98/10
BSc Thesis Title: Role of alpha 1-acid glycoprotein (AGP) on the mechanism of adjuvant
arthritis development - Gene therapy

Brief description of work: 1-year laboratory project, working on the effect of expressing alpha 1-acid glycoprotein (AGP) DNA that was inoculated intramuscularly or on the ankle joint of rats, on FCA-induced rat adjuvant arthritis.

Jun 2004– Aug 2004 Practical training, Laboratory of Molecular Toxicology and Forensic
Chemistry, School of Medicine, University of Crete
Title: Role of paraoxonase cell detoxification gene (PON1) in the development of lung cancer
in population exposed to pesticides

Brief description of thesis work: 2-month laboratory project, part of my BSc degree, analyzing the Q192R polymorphism of PON1 cell detoxification gene and its possible association with lung cancer risk in population exposed to pesticides.

WORK EXPERIENCE

March 2011 – today **Scientific consultant**, Marketing department, Stem-Health Hellas S.A
Consultation and seminars to expectant parents on private and public cord blood and tissue stem cells banking.

Sept 2009 – Jun 2010 **Research Fellow**, Laboratory of Histology-Embryology, School of

Medicine, University of Crete

Using cell lines to study the role of heparan sulfate proteoglycans on biological functions of human fibrosarcoma cells and effect of growth factors. In addition, co-supervision of BSc Biology student thesis project titled: "Role of heparin on adhesion of human melanoma cells".

2007-2008

During PhD, lab-supervision of BSc Biology student thesis project, on the effect of IGF-I on the expression of syndecans-1, -2 and -4 of human colon cancer cell lines.

Jun 2004 – Aug 2004
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Practical training, Laboratory of Molecular Toxicology and Forensic Chemistry, School of Medicine, University of Crete

Jun 2003 – Jul 2003

Additional lab experience during my BSc training, working on the analysis of biological samples by chromatographic and biological techniques.

Work included drug testing of blood, urine & hair samples by GC-MS and HPLC analysis and molecular biology techniques used for paternity tests.

METHODS & TECHNICAL EXPERIENCE

- Cell & tissue cultures (cell lines & primary cells)
- DNA/RNA/protein extraction & purification
- Immunoblotting and SDS gel electrophoresis, Dot blot
- Immunohistochemistry, immunocytochemistry
- Immunofluorescence-FACS analysis
- Polymerase Chain Reaction (PCR), Reverse transcription
- Real time PCR
- RNA interference (cell lines)
- *In vivo* experimental model (on rats) (gene delivery in rats with pharmacologically-induced arthritis)
- Cell function assays (proliferation, wound healing, migration-chemotaxis, invasion, adhesion, apoptosis, cell cycle)

QUALIFICATIONS & SKILLS

- Member of the organizing committee of the 8th Annual Meeting of the Hellenic Research Club for Connective Tissue and Matrix Biology, University of Crete (Heraklion, 14-15 April 2006)
- Grant writing experience
- IT skills: Experience of Microsoft Windows operating system, Internet Explorer, Firefox, Microsoft Office (Word, PowerPoint, Excel), Image J, Endnote, GraphPadInStat, CorelDraw, Adobe Photoshop
- Languages: Greek (native)
 - English: First Certificate in English, Cambridge University
 - French: Certificat de Langue Francaise, Palso
 - Italian: Advanced level Certificate in Italian, Hellenic Ministry of Education (level C1)

PUBLICATIONS

1. **Chatzinikolaou G.**, Nikitovic D., Stathopoulos EN., Velegrakis GA., Karamanos NK., Tzanakakis GN. Protein tyrosine kinase and estrogen receptor dependent pathways regulate the synthesis and distribution of glycosaminoglycans/proteoglycans produced by two human colon cancer cell lines. *Anticancer Res* 27: 4101-4106, 2007
2. Zafiropoulos A., Fthenou E., **Chatzinikolaou G.**, Tzanakakis GN. Glycosaminoglycans and PDGF signaling in mesenchymal cells. *Connective Tissue Research* 49: 153-156, 2008
3. **Chatzinikolaou G.**, Nikitovic D., Asimakopoulou A., Tsatsakis A., Karamanos NK., Tzanakakis GN. Heparin a unique stimulator of human colon cancer cells' growth. *IUBMB Life* 60: 333-340, 2008
4. **Chatzinikolaou G.**, Nikitovic D., Berdiaki A., Zafiropoulos A., Katonis P., Karamanos NK., Tzanakakis GN. Heparin regulates colon cancer cell growth through p38 mitogenactivated protein kinase signalling. *Cell Prolif* 43(1): 9-18, 2010
5. Nikitovic D., **Chatzinikolaou G.**, Tsiaoussis J., Tsatsakis A., Karamanos NK., Tzanakakis GN. Insights into targeting colon cancer cell fate at the level of proteoglycans/glycosaminoglycans. *Curr Med Chem*: 2012 Jun 18 [Epub ahead of print]

ORAL & POSTER PRESENTATIONS

1. Karanastasi S., **Chatzinikolaou G.**, Arsenakis M., Skouras Z., Yiangou M. Role of alpha 1 acid glycoprotein (AGP) gene on the mechanism of adjuvant arthritis development in rats - Genetherapy. 27th Scientific Conference, Hellenic Society of Biological Sciences, Nafplio, Greece, 12-15 May 2005
2. **Chatzinikolaou G.**, Nikitovic D., Tzanakakis G.N. In *vitro* effects of genistein on synthesis and distribution of GAGs by colon carcinoma cell lines. FECTS XXth & ISMB meeting, Oulu, Finland, July 1-5, 2006 (Abstract B3338)
3. **Chatzinikolaou G.**, Nikitovic D., Zafiropoulos A., Tzanakakis G. Effect of genistein on the synthesis and distribution of glycosaminoglycans/proteoglycans of two human colon cancer cell lines. 3rd Hellenic Anticancer Conference, Athens, Greece, 26-29 April 2007
4. **Chatzinikolaou G.**, Nikitovic D., Tzanakakis G.N. Effects of glycosaminoglycans/proteoglycans on the mitogenic function of FGF-2 in HT-29 and HCT116 human colon cancer cell lines. 9 Annual Meeting of the Hellenic Research Club for Connective Tissue & Matrix Biology, Athens 10-12 May 2007

5. **Chatzinikolaou G.**, Nikitovic D., Berdiaki A., Karamanos N.K., Tzanakakis G.N. Protein tyrosine kinase and estrogen receptor dependent pathways regulate the synthesis and distribution of glycosaminoglycans/proteoglycans produced by two human colon cancer cell lines. FEBS Advanced Lecture Course, Matrix Pathobiology, Signaling and Molecular Targets, Patras, Greece, May 21-26, 2007. P 69
6. **Chatzinikolaou G.**, Nikitovic D., Tzanakakis G.N. The effects of glycosaminoglycans/proteoglycans on FGF-2 induced growth on two human colon cancer cell lines. 32nd FEBS Congress Molecular Machines, Vienna, Austria, July 7-12, 2007. F1-65
7. **Chatzinikolaou G.**, Nikitovic D., Tzanakakis GN. Heparin exogenously added enhances human colon cancer cell growth. 59th National Conference of Biochemistry and Molecular Biology Athens 7-9 December 2007. (Abstract PP125)
8. Chalkiadaki G., Nikitovic D., Fthenou E., **Chatzinikolaou G.**, Tzanakakis GN. Basic-FGF mediates M5 melanoma cells adhesion by regulating syndecan expression. 33rd FEBS Congress & 11th IUBMB Conference, Athens, Greece, June 28-July 3, 2008
9. ZafiroopoulosA., **Chatzinikolaou G.**, Nikitovic D., Katonis P., Tsatsakis A., Karamanos NK and Tzanakakis GN. Decorin-induced growth inhibition is overcome through protracted expression and activation of EGFRs in osteosarcoma cells. XXIstFECTS Meeting, Marseille, France, July 9-13, 2008
10. **Chatzinikolaou G.**, Nikitovic D., Frebus M., Karamanos NK., Tzanakakis GN. Heparin induces human colon cancer cell proliferation via the p38 mitogen-activated protein kinase pathway. XXIstFECTS Meeting, Marseille, France, July 9-13, 2008
11. Nikitovic D., **Chatzinikolaou G.**, Berdiaki A., ZafiroopoulosA., Tzanakakis GN. Heparin-induced proliferation on human colon cancer cell lines is mediated through p38 mitogen-activated protein kinase. 34nd FEBS Congress Life's Molecular Interactions, Prague, Czech Republic, July 4-9, 2009
12. Chalkiadaki G., Nikitovic D., Berdiaki A., Fthenou E., **Chatzinikolaou G.**, Tzanakakis GN. Focal adhesion kinase (FAK) signaling pathway is essential for the FGF-2 induced effect on melanoma cell migration and adhesion on the fibronectin substrate. 10th Hellenic Connective Tissue Club, Patras, Greece, July 10-11, 2009 (best scientific presentation)
13. Chalkiadaki G., Nikitovic D., Berdiaki A., Fthenou E., **Chatzinikolaou G.**, Tzanakakis GN. FGF-2 mediates melanoma cell adhesion and migration through a FAK dependent mechanism. FEBS Advanced Lecture Course, Matrix Pathobiology, Signaling and Molecular Targets, Patras, Greece, July 11-16, 2009

14. **Chatzinikolaou G.**, Nikitovic D., Berdiaki A., Zafiropoulos A., Chalkiadaki G., Tzanakakis GN. Heparin affects colon cancer cell distribution through p38 mitogen-activated protein kinase. FEBS Advanced Lecture Course, Matrix Pathobiology, Signaling and Molecular Targets, Patras, Greece, July 11-16, 2009

15. Kouvidi K., Banos A., Nikitovic D., Fthenou E., **Chatzinikolaou G.**, Mytilineou M., Tzanakakis GN. HS-chains modulate TGFB2 signaling in both SMAD-dependent and independent manner to regulate fibrosarcoma cell adhesion. FEBS Advanced Lecture Course, Molecular Mechanisms in Signal Transduction and Cancer, Spetses, Greece, August 16-24, 2011