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Department of Tumor Biology
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Education

11/2012-today **PhD candidate, Department of Tumor Biology, University Medical Center Hamburg Eppendorf, Germany**

PhD thesis: «Identification and characterization of novel biomarkers for circulating and disseminated tumor cells (CTCs/DTCs) specifically responsible for bone metastases» in the frames of Marie Curie Bone-Net European Training Network on Cancer Induced Bone Disease.

Supervisor: Prof. Dr. med. Klaus Pantel

11/2010-11/2012 **MSc in Clinical Chemistry, Department of Chemistry, University of Athens, Greece**

MSc thesis: «Development and evaluation of highly sensitive HRMA assays for the detection of PIK3CA and BRAF genes mutations in Circulating Tumor Cells»,

Supervisor: Professor Evi S. Lianidou

9/2004-9/2010 **BSc, Graduation Faculty of Sciences, Department of Chemistry, University of Athens, Greece**

BSc thesis: «Determination of the Binding Constant of the complex [ReO(CI)3dppz] to DNA using Fluorimetry and Spectrophotometry UV/ VIS»

Supervisor: Professor Christianna Mitsopoulou

Scholarships and Awards

Scholarships: Marie Curie Bone-Net European Training Network for early-stage researchers (ESR) on Cancer Induced Bone Disease (2012-2015)

Travel award: 2nd International Symposium on Advances in Circulating Tumor Cells (ACTC), From Basic Research to Clinical Practice, ACTC 2014, 08 –11/10/2014, Crete, Greece. **Efstathiou A**, Bednarz-Knoll N, Gorges TM, Mueller V, Kang Y, Pantel K. VCAM-1 expression in circulating tumor cells in metastatic breast cancer.

Experience in research techniques

Circulating Tumor Cell (CTC) enrichment from peripheral blood:

Ficoll density gradient centrifugation

Immunomagnetic cell separation (MACs)

Cell size-based sieving methods

In vivo isolation of Circulating Tumor Cells from the circulation (GILUPI CellCollector)

Cell culture techniques

DNA and RNA extraction

Single- Cell Whole Genome Amplification

Polymerase Chain Reaction (PCR): Real-time quantitative PCR (LightCycler Technology, LightScanner® 32 System)
Gel electrophoresis
High Resolution Melting Analysis (HRMA)
In situ hybridization
Immunohistochemistry, Immunofluorescence
Light and fluorescent microscopy

Experience in diagnostic techniques

Detection of HAV, HBV, HCV, HIV presence with the usage of contemporary immunochemical analyzers
Detection of HTLV in blood donors using ELISA method
Determination of erythropoietin (EPO) using quantitative ELISA.
Confirmation of HIV and HCV presence by immunoblotting.
Detection of immunoglobulins in using ELISA method
Determination of biochemical and cardiological markers

Internships

- 07/2011-09/2011** Internship in the Clinical Chemistry Laboratory of Hospital of Athens "Tzaneio".
- 10/2011-11/2011** Internship in the Clinical Chemistry Laboratory of Hospital of Athens "Onasio"
- 02-06/2011** Teaching Assistant, Lab. of Analytical Chemistry, Department of Chemistry Training of undergraduate students of Biology in the subject of "Instrumental Analysis".
- 10-02/2011-2012** Assistant in the laboratory of Clinical Chemistry of department of Chemistry during the training of master students in the subject of "Clinical Chemistry".

Publications

Markou A, Farkona S, Schiza C, **Efstathiou T**, Kounelis S, Malamos N, Georgoulis V, Lianidou E. PIK3CA mutational status in circulating tumor cells can change during disease recurrence or progression in patients with breast cancer. **Clin Cancer Res.** 2014;20(22):5823-34.

Bednarz-Knoll N, **Efstathiou A**, Gotzhein F, Wikman H, Mueller V, Kang Y, Pantel K. Potential role of Jagged1 in metastatic progression of human breast carcinomas.(under preparation)

Oral Presentations

Markou A*, Farkona S, Schiza C, **Efstathiou T**, Kounelis S, Malamos N, Georgoulis V, Lianidou E. PIK3CA Mutational Status in Circulating Tumor Cells Can Change During Disease Recurrence or Progression in Patients with Breast Cancer. **12th Conference of Clinical Chemistry, 7-8/11/2014, Athens, Greece**

Markou A*, Farkona S, Schiza C, **Efstathiou T**, Kounelis S, Malamos N, Georgoulis V, Lianidou E. Mutational Status in Circulating Tumor Cells Can Change During Disease Recurrence or Progression in Patients with Breast Cancer. **21th Conference of Clinical Oncology 2010, Heraklio, Greece**

*Athina Markou presented

Poster Presentations

Bednarz-Knoll N, **Efstathiou A**, Gotzhein F, Wikman H, Mueller V, Kang Y, Pantel K. Jagged1 expression and its relevance in metastatic progression of breast cancers. **26th EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics, 18-21/11/2014, Barcelona, Spain.**

Efstathiou A, Bednarz-Knoll N, Gorges TM, Mueller V, Kang Y, Pantel K. VCAM-1 expression in circulating tumor cells in metastatic breast cancer. **2nd International Symposium on Advances in Circulating Tumor Cells (ACTC), From Basic Research to Clinical Practice, ACTC 2014, 08-11/10/2014, Crete, Greece.**

Markou A, Farkona S, Schiza C, **Efstathiou T**, Kounelis S, Malamos N, Georgoulas V, Lianidou E. PIK3CA Mutational Status in Circulating Tumor Cells Can Change During Disease Recurrence or Progression in Patients with Breast Cancer. **Advances in Circulating Tumour Cells (ACTC) from Basic Research to Clinical Practice, 8-11/10/2014, Crete, Greece.**

Efstathiou A, Bednarz-Knoll N, Gorges TM, Mueller V, Kang Y, Pantel K. VCAM-1 expression in circulating tumor cells in metastatic breast cancer. **Bone Microenvironment: a Net for Cancer Cells, 07/10/2014, Crete, Greece.**

Markou A, Farkona S, Schiza C, **Efstathiou T**, Kounelis S, Malamos N, Georgoulas V, Lianidou E. Development and validation of a novel and highly sensitive method for the detection of PIK3CA hotspot mutations in CTC. **AACR Annual Meeting 2014, 05-09/04/2014, San Diego, California.**

Bednarz-Knoll N, **Efstathiou A**, Gotzhein F, Wikman H, Mueller V, Kang Y, Pantel K. Jagged1 expression and its relevance in metastatic progression of breast cancers. **9th International Symposium on Minimal Residual Cancer, 25-27/09/2013, Paris, France.**

Markou A, Farkona S, Schiza C, **Efstathiou T**, Kounelis S, Malamos N, Georgoulas V, Lianidou E. Development and validation of a novel and highly sensitive method for the detection of PIK3CA hotspot mutations in CTC. **9th International Symposium on Minimal Residual Cancer, 25-27/09/2013, Paris, France.**

Oral presentations during Bone-Net European Training Network on Cancer Induced Bone Disease (2013-2014)

Selected proteins potentially involved in tumor cell dissemination and formation of bone metastasis in breast cancer patients. **A Marie Curie ITN Conference on Cancer and Bone Metastasis. 18/11/2014, Barcelona, Spain.**

18-20/06/2014, Workshop name: 'Minimal residual disease: from bench to bedside', **University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany**

03-06/02/2014, Workshop name: 'Optimising the analysis of cancer induced bone disease', **Department of Oncology, Medical School, University of Sheffield, United Kingdom**

24-26/06/2013, Workshop name: 'Molecular imaging of tumor progression and metastasis', **Leiden University Medical Center (LUMC), Leiden, The Netherlands**

06-08/02/2013, Workshop name: 'Molecularly targeted therapies and drug delivery in solid tumours', **University of Eastern Finland, Kuopio, Finland**

Communication and other professional skills

Participation in the Phd Programme 'Graduate Studies in Molecular Biology' at University Medical Center Hamburg-Eppendorf (UKE) (11/2013-today, 4 semesters)

Related lectures:

1st Semester: "Molecular Biology Methods in Research and Diagnostics"

2nd Semester: "Protein Analysis and Cell Biology Methods in Research and Diagnostics"

3rd Semester: "Neurobiological and Immunological Systems"

4th Semester: "Molecular Mechanisms of Genetic Diseases"

Practical courses:

Introduction to cell culture, generation of stable transfected cells, Internalization assay.

Immunohistochemistry.

Histological quantification (stereology, fiber density measurements).

Analysis of protein-protein interactions, GST-Pulldown, Western Blotting.

Introduction to flow cytometry.

Sequencing.

Written and oral reports during the Phd Programme 'Graduate Studies in Molecular Biology' at UKE

Oral reports and presentations during internal Research Group meetings

Oral reports and presentations during weekly Circulating Tumor Cells (CTCs) meeting

Oral presentations during internal seminars of Department of Tumor Biology (once a year)

Participation in writing manuscripts based on the obtained results

Organization of the final Workshop for BONE-NET project in October 2014, Crete, Greece

PC skills

Very good knowledge of Microsoft Office, MDL ISIS Draw, SPSS (statistical software), in silico design of PCR primers and probes Primer Premier 5.0.

Languages

Greek (native)

English (fluent, Certificate of Proficiency in English, University of Michigan)

German (good, in progress)