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Dr. Athina Markou is currently a postdoctoral fellow in the Laboratory of Dr Evi Lianidou (<http://en.actc-lab.chem.uoa.gr/>), Dept of Chemistry, University of Athens, Greece, after completing her PhD in 2009, in the same laboratory. During her PhD she worked on the development of methodologies for the molecular characterization of Circulating Tumor Cells (CTC) in breast cancer and established a novel liquid bead array hybridization assay for studying the expression of 6 genes in CTCs (Markou et al, Clin Chem 2011). In recognition of this work, she received the AACR-Susan G. Komen Scholar-in-Training Award at the AACR 102nd Annual Meeting in 2011. As a postdoctoral fellow, she continues her research on the molecular characterization of CTC, and additionally she is working on the evaluation of miRNAs expression in breast cancer tissues, plasma and CTC. In recognition for this work, she received the AVON foundation international travel award at the AACR 2008 Annual Meeting for the evaluation of the prognostic significance of mature miR-10b expression in early breast cancer. Dr Athina Markou has already 17 publications in peer reviewed journals and one of her papers has been in the top ten articles published in Clinical Chemistry in (<http://www.ncbi.nlm.nih.gov/pubmed/?term=Markou+Lianidou>).

1. Research Interests/Activities:

2. Development and clinical applications of highly sensitive real time PCR methods for quantitative gene expression
3. Development and clinical applications of highly sensitive real time PCR methods for mutation analysis.
4. Development and clinical applications of highly sensitive methylation specific PCR methods for DNA methylation analysis
5. Cancer micrometastasis: breast cancer, non small cell lung cancer

6. Circulating Tumor Cells: Development of novel methods for their detection and enumeration
7. Circulating Tumor Cells: Development of novel methods for their molecular characterization

2. List of Publications

- 1: **Markou A**, Lianidou E, Georgoulas V. Metastasis-related miRNAs: a new way to differentiate patients with higher risk? *Future Oncol.* 2015 Feb;11(3):365-7. doi: 10.2217/fo.14.294. PubMed PMID: 25675118.
- 2: **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. *Clin Cancer Res.* 2014 Nov 15;20(22):5823-34. doi: 10.1158/1078-0432.CCR-14-0149. PubMed PMID: 25398847.
- 3: Lianidou ES, Strati A, **Markou A**. Circulating tumor cells as promising novel biomarkers in solid cancers. *Crit Rev Clin Lab Sci.* 2014 Jun;51(3):160-71. doi: 10.3109/10408363.2014.896316. Epub 2014 Mar 19. Review. PubMed PMID: 24641350.
- 4: **Markou A**, Yousef GM, Stathopoulos E, Georgoulas V, Lianidou E. Prognostic significance of metastasis-related microRNAs in early breast cancer patients with a long follow-up. *Clin Chem.* 2014 Jan;60(1):197-205. doi: 10.1373/clinchem.2013.210542. Epub 2013 Oct 16. PubMed PMID: 24132943.
- 5: Sourvinou IS, **Markou A**, Lianidou ES. Quantification of circulating miRNAs in plasma: effect of preanalytical and analytical parameters on their isolation and stability. *J Mol Diagn.* 2013 Nov;15(6):827-34. doi: 10.1016/j.jmoldx.2013.07.005. Epub 2013 Aug 27. PubMed PMID: 23988620.
- 6: **Markou A**, Sourvinou I, Vorkas PA, Yousef GM, Lianidou E. Clinical evaluation of microRNA expression profiling in non small cell lung cancer. *Lung Cancer.* 2013 Sep;81(3):388-96. doi: 10.1016/j.lungcan.2013.05.007. Epub 2013 Jun 10. PubMed PMID: 23756108.
- 7: Strati A, Kasimir-Bauer S, **Markou A**, Parisi C, Lianidou ES. Comparison of three molecular assays for the detection and molecular characterization of circulating tumor cells in breast cancer. *Breast Cancer Res.* 2013 Mar 7;15(2):R20. doi: 10.1186/bcr3395. PubMed PMID: 23497487; PubMed Central PMCID:PMC3672668.
- 8: Lianidou ES, **Markou A**, Strati A. Molecular characterization of circulating tumor cells in breast cancer: challenges and promises for individualized cancer treatment. *Cancer Metastasis Rev.* 2012 Dec;31(3-4):663-71. doi: 10.1007/s10555-012-9366-8. Review. PubMed PMID: 22692478.
- 9: Lianidou ES, **Markou A**. Molecular assays for the detection and characterization

of CTCs. *Recent Results Cancer Res.* 2012;195:111-23. doi: 10.1007/978-3-642-28160-0_10. Review. PubMed PMID: 22527499.

10: Parisi C, **Markou A**, Lianidou ES. Development of a multiplexed PCR-coupled liquid bead array assay for vascular endothelial growth factor (VEGF) splice variants. *Clin Biochem.* 2012 Apr;45(6):475-82. doi: 10.1016/j.clinbiochem.2012.01.025. Epub 2012 Feb 11. PubMed PMID: 22330939.

11: Strati A, **Markou A**, Parisi C, Politaki E, Mavroudis D, Georgoulas V, Lianidou E. Gene expression profile of circulating tumor cells in breast cancer by RT-qPCR. *BMC Cancer.* 2011 Oct 4;11:422. doi: 10.1186/1471-2407-11-422. PubMed PMID: 21967632; PubMed Central PMCID: PMC3224356.

12: Lianidou ES, **Markou A**. Circulating tumor cells as emerging tumor biomarkers in breast cancer. *Clin Chem Lab Med.* 2011 Oct;49(10):1579-90. doi: 10.1515/CCLM.2011.628. Epub 2011 Jul 29. Review. PubMed PMID: 21801030.

13: Lianidou ES, **Markou A**. Circulating tumor cells in breast cancer: detection systems, molecular characterization, and future challenges. *Clin Chem.* 2011 Sep;57(9):1242-55. doi: 10.1373/clinchem.2011.165068. Epub 2011 Jul 22. Review. PubMed PMID: 21784769.

14: **Markou A**, Liang Y, Lianidou E. Prognostic, therapeutic and diagnostic potential of microRNAs in non-small cell lung cancer. *Clin Chem Lab Med.* 2011 Oct;49(10):1591-603. doi: 10.1515/CCLM.2011.661. Epub 2011 Jul 18. Review. PubMed PMID: 21767219.

15: **Markou A**, Strati A, Malamos N, Georgoulas V, Lianidou ES. Molecular characterization of circulating tumor cells in breast cancer by a liquid bead array hybridization assay. *Clin Chem.* 2011 Mar;57(3):421-30. doi: 10.1373/clinchem.2010.154328. Epub 2011 Jan 18. PubMed PMID: 21245367.

16: **Markou A**, Tsaroucha EG, Kaklamanis L, Fotinou M, Georgoulas V, Lianidou ES. Prognostic value of mature microRNA-21 and microRNA-205 overexpression in non-small cell lung cancer by quantitative real-time RT-PCR. *Clin Chem.* 2008 Oct;54(10):1696-704. doi: 10.1373/clinchem.2007.101741. Epub 2008 Aug 21. PubMed PMID: 18719201.

17: Kroupis C, **Markou A**, Vourlidis N, Dionysiou-Asteriou A, Lianidou ES. Presence of high-risk human papillomavirus sequences in breast cancer tissues and association with histopathological characteristics. *Clin Biochem.* 2006 Jul;39(7):727-31. Epub 2006 Jun 15. PubMed PMID: 16780823.

3. Post-doctoral Researcher in national and international research grants

1. Liquopsy 6-2014-Today Funded by European Regional Development Fund and National Resources (General Secretariat of Research and Technology in Greece) : In vivo capturing and molecular characterization of circulating

tumor cells as a novel tool for improving tertiary prevention in breast cancer.
Coordinator: Dr. E. S. Lianidou

2. Oncoseed 1/3/2012- 31/8/2014 (Funded by European Regional Development Fund and National Resources (General Secretariat of Research and Technology in Greece) Biology of Circulating Tumour Cells, Distant Metastasis & Development of Liquid Biopsy Methods. Coordinator: Dr. E. S. Lianidou

4.Awards in International Meetings

1) **AACR 2011 - SUZAN COMEN Scholar-in-Training Award**, (to support attendance of Athina Markou at the AACR 102nd Annual Meeting 2011): “Molecular characterization of circulating tumor cells in breast cancer by liquid bead array hybridization assay”. **Athina N. Markou**, Areti Strati, Nikos Malamos, Vassilis Georgoulis, Evi Lianidou. AACR 2011: 102nd Annual Meeting of American Association of Cancer Research (AACR), Orlando, FL, USA, 2011

2) **AACR 2008 - AVON FOUNDATION INTERNATIONAL TRAVEL AWARD**: 99th Annual Meeting of American Association of Cancer Research (AACR), San Diego, USA, 2008, **Athina N. Markou**, Areti D. Strati, Loukas Kaklamanis, Maria Kafoussi, Stathis Stathopoulos, Vassilis Georgoulis, Evi S. Lianidou. Evaluation of the prognostic significance of mature miR-10b expression in early breast cancer

4) **AACR 2008 - AVON FOUNDATION INTERNATIONAL TRAVEL AWARD**: 99th Annual Meeting of American Association of Cancer Research (AACR), San Diego, USA, 2008, Areti D. Strati **Athina N. Markou**, N. Malamos, Dimitris Mavroudis, Vassilis Georgoulis, Evi S. Lianidou TWIST1 expression in circulating tumor cells of early breast cancer patients.