

Dimitra J Mitsiou

Senior Researcher

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CURRICULUM VITAE

Education

1996: PhD in Biological Sciences, Department of Biology, School of Sciences, National and Kapodistrian University of Athens (NKUA).

1989: Diploma in Biology, Department of Biology, School of Sciences, NKUA.

Appointments

2019-present: Senior Researcher, National Hellenic Research Foundation, Institute of Chemical Biology (formerly Institute of Biology, Medicinal Chemistry and Biotechnology).

2009-2019: Associate Researcher, National Hellenic Research Foundation, Institute of Biology, Medicinal Chemistry and Biotechnology (the result of the merger of the Institute of Biological Research and Biotechnology and the Institute of Organic and Pharmaceutical Chemistry in 2012).

2006-2009: Research Lecturer, National Hellenic Research Foundation, Institute of Biological Research and Biotechnology.

2001-2006: Postdoctoral Researcher, National Hellenic Research Foundation, Institute of Biological Research and Biotechnology.

1997-2001: Postdoctoral Researcher, Radboud University of Nijmegen (formerly Katholieke Universiteit Nijmegen), Nijmegen Center for Molecular Life Sciences (NCMLS), Department of Molecular Biology, The Netherlands.

1995-1996: Postdoctoral Researcher, National Hellenic Research Foundation, Institute of Biological Research and Biotechnology.

Training - Research activity

1990-1995: Predoctoral research fellow, National Hellenic Research Foundation, Institute of Biological Research and Biotechnology.

PhD thesis title: 'Glucocorticoid receptor interaction with heat shock proteins'.

1988-1989: Undergraduate research fellow, National Hellenic Research Foundation, Institute of Biological Research and Biotechnology.

Diploma thesis title: 'Glucocorticoid receptor structure'.

Secondments

Three 2-month secondments to Radboud University of Nijmegen, Nijmegen Center for Molecular Life Sciences (NCMLS), The Netherlands: June 2004-August 2004, February 2006-April 2006 and October 2006-December 2006. Secondments aimed at training and transfer of knowledge for the implementation of the EU Marie Curie Development Host-Transfer of Knowledge Project MACROGENEX.

Honours, awards, distinctions

- 2016: First award for best poster presentation, 1st International Conference on Pharmaceutical Bioinformatics, January 24-26, Pattaya, Thailand.
- 2013: Organizing Committee Member of the 64th Conference of the Hellenic Society of Biochemistry and Molecular Biology (6-8 December 2013, Athens, Greece).
- 2001-2002: EU Marie Curie-TMR-Return individual postdoctoral fellowship (HPMI-CT-2000-00904), in the context of Training and Mobility of Researchers (TMR) Work Programme, National Hellenic Research Foundation, Institute of Biological Research and Biotechnology.
- 1998-2000: EU Marie Curie-TMR individual postdoctoral fellowship (ERB-FMBI-CT97-2728), in the context of Training and Mobility of Researchers (TMR) Work Programme, Katholieke University of Nijmegen, Department of Molecular Biology.
- 1995: European Science Foundation (ESF) fellowship for the attendance of the 3rd European Research Conference on the 'Biology of Molecular Chaperones: Biological roles and action of molecular chaperones', September 14-19, 1995, Crete, Greece.
- 1990-1995: Individual predoctoral fellowship for PhD research, National Hellenic Research Foundation, Institute of Biological Research and Biotechnology.

Recent Research Activities

Recent/current research aims at

- unraveling the role of Glucocorticoid Receptor in inflammation and cancer and developing Selective Glucocorticoid Receptor Agonists for the treatment of inflammatory disorders.
- understanding the molecular determinants of breast cancer resistance to adjuvant endocrine therapy and developing therapeutic approaches to overcome it.
- unraveling the significance of Estrogen Receptor beta in breast cancer prognosis and treatment.
- developing Estrogen Receptor modulators for preventing and/or treating endocrine disorders.

Detailed description of specific aims and recent research achievements can be found at the group's web site: http://www.eie.gr/nhrf/institutes/icb/research_groups/MitsiouDimitra_group_en.html

Professional activities

Author of

- 25 original publications in international referred scientific journals (listed below) that attracted 892 citations by March 2022 (<https://scholar.google.com/citations?user=CJ046WcAAAAJ&hl=en>).
- more than 70 peer-reviewed abstracts in National and International Conferences.

Competitively funded projects: coordinator or collaborator in 9 National and 3 European projects (listed below).

Member of the

- Hellenic Society of Biochemistry and Molecular Biology (HSBMB)
- Association of Greek Researchers
- Marie Curie Fellowship Association

Reviewer in International Scientific Journals

Cancers, Current Oncology, Expert Opinion On Investigational Drugs, Journal of Experimental Pharmacology, Pharmaceuticals, The International Journal of Biochemistry and Cell Biology.

Expert Evaluator for Research-Funding Agencies.

Teaching and supervision experience

PhD Thesis:

- full supervision:
 - Dimitra Siakouli (ongoing), Medical School, NKUA
- lab supervision:
 - Torill Hoiby (2004), Department of Molecular Biology, Radboud University of Nijmegen
 - Efrosini S Katsanou (2006), Medical School, NKUA
 - Eugen Dhimolea (2006), Medical School, NKUA
 - Niki Chantzi (2011), Medical School, NKUA
 - Aggeliki K Meligova (2011), Medical School, NKUA
 - Maria Makropoulou (2016) and Argyro Vontzalidou (2018,) Faculty of Pharmacy, NKUA
- member of evaluation committee:
 - Torill Hoiby (2004), Department of Molecular Biology, Radboud University of Nijmegen
 - Ioannis Tsialtas (ongoing) and Achilleas Georgantopoulos (ongoing), Department of Biochemistry and Biotechnology, University of Thessaly

MSc Thesis:

- Eleni Florou (ongoing), MSc 'Neoplastic Disease in Humans', Medical School, NKUA
- Despoina S. Xenopoulou (ongoing), Joint Master's Degree 'Oncology: from Oncogenesis to Therapy', co-organized by ICB/NHRF and the Medical School, University of Crete, Greece.

BSc Thesis:

- Mike Aerts (1997) and Jos G. van Rosmalen (1999), co-supervision with Prof HG Stunnenberg, Department of Molecular Biology, Radboud University of Nijmegen
- Liza Eklund and Sophia Weiss (Erasmus, 2016), School of Health Sciences, Örebro University, Sweden
- George Panagiotou (ongoing), Department of Biology, NKUA
- Maria Zoumpouli (ongoing), Department of Biotechnology, Agricultural University of Athens

Training Internships:

- Elza Chotza (2018), Department of Informatics and Telecommunications, University of Thessaly
- Maria-Eleni Pouliou (2018) Department of Biotechnology, Agricultural University of Athens
- Myrto Charouli (2019), Department of Biochemistry and Biotechnology, University of Thessaly
- Chrisanthi Tsirligani (2019), Department of Biology, NKUA
- Maria Zoumpouli (2019), Department of Biotechnology, Agricultural University of Athens

Laboratory courses:

1998, 1999, 2000: 1-week laboratory course for postgraduate students: 'Detection of a VNTR (variable number of tandem repeats) polymorphism by Polymerase Chain Reaction', Department of Molecular Biology, Radboud University of Nijmegen.

2001: 4-week laboratory course for postgraduate students: 'Regulation of transcription in eukaryotic cells', Department of Molecular Biology, Radboud University of Nijmegen.

Lecturer in MSc courses:

2019-present: Joint MSc Programme: 'Oncology: from oncogenesis to therapy'; co-organized by ICB/NHRF and the Medical School, University of Crete, Greece.

2015-present: Joint MSc Programme: 'Bioentrepreneurship'; co-organized by ICB/NHRF and the University of Thessaly, Greece.

Organizing Committee of Workshops:

- 'Workshop on Systems Biology': Institute of Biological Research and Biotechnology, National Hellenic Research Foundation and School of Science and Technology, Örebro Life Science Center, Örebro University, Sweden (12-14 October 2011, Athens).
- 'Targeted Drug Discovery Workshop': Institute of Biology, Medicinal Chemistry and Biotechnology, National Hellenic Research Foundation (10-16 Οκτωβρίου 2016, Athens).

Competitively Funded Projects

1. Operational Program 'Human Resources Development, Education and Lifelong Learning 2014-2020', Project **ERBETA**: 'Validation - Reinforcement of the Prognostic Significance of Estrogen Receptor beta in Early Breast Cancer', MIS: 5050141, 2020-2022.
2. Research Funding Program KRIPIS (ESPA 2014-2020), Project **STHENOS-β**: 'Targeted therapeutic approaches against degenerative diseases, cancer included – optimization of targeted bioactive compounds', MIS: 5002398, 2017-2021.
3. Research Funding Program KRIPIS (ESPA 2007-2013), Project **STHENOS**: 'Targeted therapeutic approaches against degenerative diseases, cancer included', MIS: 447985, 2013-2015.
4. Research Funding Program THALES, Project **SERMENCO**: 'Development of new selective estrogen receptor modulators for preventing menopause consequences', Grant: 80038, 2012-2015.
5. Research Funding Program THALES, Project **TNBC**: 'Molecular sub-typing of Triple Negative Breast Cancer', Grant: 85355, 2012-2015.
6. National action 'Cooperation' – Sub-action I: Medium & Small Scale Cooperative Projects, Project **OSTEOPRO**: 'Development of natural products and analogues for osteoporosis prevention: transcriptomic, proteomic and metabolomic approaches, Grant: 09ΣYN-11-1076, 2011-2015.
7. National action 'Cooperation' – Sub-action II: Large Scale Cooperative Projects, Project **POM**: 'PIK3CA Oncogenic Mutations in Breast and Colon Cancers: Development of Targeted Anticancer Drugs and Diagnostics', Grant: 09ΣYN-11-675, 2010-2015.
8. Greek Framework Program Competitiveness- Research Network PENED, Project: 'In search of a role for estrogen receptor beta in breast cancer', Grant: 03EΔ644, 2006-2009.
9. EU Marie Curie Development Host-Transfer of Knowledge Program, Project **MACROGENEX**: 'Macromolecular assemblies involved in regulated gene expression', Grant: MTKD-CT-2004-509836, 2004-2008.
10. EU Marie Curie Training and Mobility of Researchers (TMR) Program, Project: 'Effect of glucocorticoid receptor beta isoform on glucocorticoid signaling', Grant: HPMF-CT-2000-00904, 2001-2002.
11. EU Marie Curie Training and Mobility of Researchers (TMR) Program, Project: 'Molecular mechanisms of retinoid receptor function in pluripotent cells', Grant: ERB-FMBI-CT97-2728, 1998-2000.
12. Greek Framework Program EPET-II – funding scheme PENED, Project: 'The Thermotolerant Human Cell as a Protein Production System', Grant: 95ED784, 1996-1997.

Publications in international referred journals

1. Bereketoglu C, Modig C, Pradhan A, Andersson PL, Stasinopoulou S, Mitsiou DJ, Alexis MN, Olsson PE. The brominated flame retardants TBEC and DPTE alter prostate growth, histology and gene expression patterns in the mouse. **Reprod Toxicol**. 2021, 102:43-55. doi: 10.1016/j.reprotox.2021.04.002.
2. Lambrinidis G, Guedard C, Stasinopoulou S, Angelopoulou A, Ganou V, Meligova AK, Mitsiou DJ, Marakos P, Pouli N, Mikros E, Alexis MN. Design, synthesis, and biological evaluation of new raloxifene analogues of improved antagonist activity and endometrial safety. **Bioorg Chem**. 2021, 106:104482. doi: 10.1016/j.bioorg.2020.104482.
3. Fokialakis N, Alexi X, Aligiannis N, Boulaka A, Meligova AK, Kalpoutzakis E, Pratsinis H, Cheilari A, Mitsiou DJ, Mitakou S, Alexis MN. Biological evaluation of isoflavonoids from *Genista halacysi* using estrogen-target cells: Activities of glucosides compared to aglycones. **PLoS One**. 2019, 14(1):e0210247. doi: 10.1371/journal.pone.0210247.
4. Potamitis C, Siakouli D, Papavasileiou KD, Boulaka A, Ganou V, Roussaki M, Calogeropoulou T, Zoumpoulakis P, Alexis MN, Zervou M, Mitsiou DJ. Discovery of New non-steroidal selective glucocorticoid receptor agonists. **J Steroid Biochem Mol Biol**. 2019, 186:142-153. doi: 10.1016/j.jsbmb.2018.10.007.

5. Thai QD, Tchoumtchoua J, Makropoulou M, Boulaka A, Meligova AK, Mitsiou DJ, Mitakou S, Michel S, Halabalaki M, Alexis MN, Skaltsounis LA. Phytochemical study and biological evaluation of chemical constituents of *Platanus orientalis* and *Platanus × acerifolia* buds. **Phytochemistry**. 2016, 130:170-181. doi: 10.1016/j.phytochem.2016.04.006.
6. Tchoumtchoua J, Makropoulou M, Ateba SB, Boulaka A, Halabalaki M, Lambrinidis G, Meligova AK, Mbanya JC, Mikros E, Skaltsounis AL, Mitsiou DJ, Njamen D, Alexis MN. Estrogenic activity of isoflavonoids from the stem bark of the tropical tree *Amphimas pterocarpoides*, a source of traditional medicines. **J Steroid Biochem Mol Biol**. 2016, 158:138-148. doi: 10.1016/j.jsbmb.2015.12.015.
7. Dhimolea E, Tiniakos DG, Chantzi NI, Goutas N, Vassilaros SD, Mitsiou DJ, Alexis MN. Estrogen receptors β 1 and β 2 are associated with distinct responses of estrogen receptor α -positive breast carcinoma to adjuvant endocrine therapy. **Cancer Lett**. 2015, 358(1):37-42. doi: 10.1016/j.canlet.2014.12.022
8. Chantzi NI, Palaiologou M, Stylianidou A, Goutas N, Vassilaros S, Kourea HP, Dhimolea E, Mitsiou DJ, Tiniakos DG, Alexis MN. Estrogen receptor β 2 is inversely correlated with Ki-67 in hyperplastic and noninvasive neoplastic breast lesions. **J Cancer Res Clin Oncol**. 2014, 140(6):1057-1066. doi: 10.1007/s00432-014-1652-0.
9. Panagiotidou E, Zerva S, Mitsiou DJ, Alexis MN, Kitraki E. Perinatal exposure to low dose bisphenol A affects the neuroendocrine stress response in rats. **J Endocrinol**. 2014, 220(3):207-218. doi: 10.1530/JOE-13-0416.
10. Chantzi NI, Tiniakos DG, Palaiologou M, Goutas N, Filippidis T, Vassilaros SD, Dhimolea E, Mitsiou DJ, Alexis MN. Estrogen receptor beta 2 is associated with poor prognosis in estrogen receptor alpha-negative breast carcinoma. **J Cancer Res Clin Oncol**. 2013, 139(9):1489-1498. doi: 10.1007/s00432-013-1467-4.
11. Rao NRA, McCalman MT, Moulos P, Francoijs KJ, Chatziioannou A, Kolisis FN, Alexis MN, Mitsiou DJ, Stunnenberg HG. Co-activation of GR and NF κ B alters the repertoire of their binding sites and target genes. **Genome Research** 2011, 21(9):1404-1416. doi: 10.1101/gr.118042.110.
12. Chantzi NI, Meligova AK, Dhimolea E, Petrou CC, Mitsiou DJ, Pechtelidou A, Florentin I, Kitraki E, Cordopatis P, Tiniakos DG, Alexis MN. Insights into ectopic estrogen receptor expression, nucleocytoplasmic distribution and interaction with chromatin obtained with new antibodies to estrogen receptor α and β . **Steroids** 2011, 76(10-11):974-85. doi: 10.1016/j.steroids.2011.05.010.
13. Skretas G, Meligova AK, Villalonga-Barber C, Mitsiou DJ, Alexis MN, Micha-Screttas M, Steele BR, Screttas CG, Wood DW. Engineered chimeric enzymes as tools for drug discovery: generating reliable bacterial screens for the detection, discovery, and assessment of estrogen receptor modulators. **J Am Chem Soc**. 2007, 129(27):8443-57. doi: 10.1021/ja067754j.
14. Høiby T, Zhou H, Mitsiou DJ, Stunnenberg HG. A facelift for the general transcription factor TFIIA. **Biochim. Biophys. Acta** 2007, 1769:429-436. doi: 10.1016/j.bbaexp.2007.04.008.
15. Zhou H, Spicuglia S, Hsieh JJ, Mitsiou DJ, Høiby T, Veenstra GJ, Korsmeyer SJ, Stunnenberg HG. Uncleaved TFIIA is a substrate for *taspase1* and active in transcription. **Mol. Cell. Biol**. 2006, 26:2728-2735. doi: 10.1128/MCB.26.7.2728-2735.2006.
16. Mitsiou DJ, Florentin I, Baki L, Georgakopoulos A, Alexis MN. Pronounced enhancement of glucocorticoid-induced gene expression following severe heat shock of heat-conditioned cells hints to intricate cell survival tactics. **J Steroid Biochem Mol Biol**. 2005, 94(1-3):209-17. doi: 10.1016/j.jsbmb.2005.01.008.
17. Siriani D, Mitsiou DJ, Alexis MN. Heat-induced degradation of overexpressed glucocorticoid receptor Separate protective roles of hsp90 and hsp70. **J Steroid Biochem Mol Biol**. 2005, 94(1-3):93-101. doi: 10.1016/j.jsbmb.2005.01.013.
18. Fokialakis N, Lambrinidis G, Mitsiou DJ, Aligiannis N, Mitakou S, Skaltsounis AL, Pratsinis H, Mikros E, Alexis MN. A new class of phytoestrogens; evaluation of the estrogenic activity of deoxybenzoins. **Chem Biol**. 2004, 11(3):397-406.

19. Høiby T, Mitsiou DJ, Zhou H, Erdjument-Bromage H, Tempst P, Stunnenberg HG. Cleavage and proteasome-mediated degradation of the basal transcription factor TFIIA. **EMBO J.** 2004, 23:3083-3091. doi: 10.1038/sj.emboj.7600304.
20. Mitsiou DJ, Stunnenberg HG. p300 is involved in formation of the TBP-TFIIA-containing basal transcription complex, TAC. **EMBO J.** 2003, 22:4501-4511. doi: 10.1093/emboj/cdg419.
21. Siriani D, Mitsiou DJ, Alexis MN. Overexpressed glucocorticoid receptor negatively regulates gene expression under conditions that favour accumulation of non-hormone-binding forms of the receptor. **J Steroid Biochem Mol Biol.** 2003, 84(2-3):171-180. doi: 10.1016/s0960-0760(03)00027-x.
22. Mitsiou DJ, Siriani D, Katsanou ES, Florentin I, Georgakopoulos A, Alexis MN. Maintenance of glucocorticoid receptor function following severe heat-shock of heat-conditioned cells. **Mol Cell Endocrinol.** 2003, 201(1-2):97-108. doi: 10.1016/s0303-7207(02)00428-8.
23. Mitsiou DJ, Stunnenberg HG. TAC, a TBP-sans TAFs complex containing the unprocessed TFIIA precursor and the TFIIA subunit. **Molecular Cell** 2000, 6:527-537. doi: 10.1016/s1097-2765(00)00052-6.
24. Mitsiou DJ, Alexis MN. Temporary loss of glucocorticoid receptor-mediated regulation of gene expression in heat-shocked cells. **FEBS Lett.** 1995, 362(3):309-15. doi: 10.1016/0014-5793(95)00263-9.
25. Alexis MN, Mavridou I, Mitsiou DJ. Subunit composition of the untransformed glucocorticoid receptor in the cytosol and in the cell. **Eur J Biochem.** 1992, 204(1):75-84. doi: 10.1111/j.1432-1033.1992.tb16607.x.