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Curriculum Vitae

Education

1974-1978: PhD Biochemistry, King's College, University of London, London UK - Supervisor: Dr Walter B. Gratzer

1973-1974: Postgraduate training, Department of Biology, NCSR 'Demokritos', Greece – Supervisor: Dr Christine Zioudrou

1973: Diploma in Chemistry, School of Natural Sciences, University of Athens, Greece

Appointments

1996–present: Research professor, Molecular Endocrinology Team, IBRB/IBMCB, NHRF

1992-1996: Research associate professor, Molecular Endocrinology Team, IBRB, NHRF and Adjunct Professor of Biochemistry, Technological Educational Institute, Athens

1983-1992: Research assistant professor, Molecular Endocrinology Program, IBRB, NHRF

1980-1983: Research Fellow, IBRB, NHRF

Professional activities

- Author of 60 original peer-reviewed publications in international scientific journals included in PubMed (listed below). His publications have attracted to this day more than 800 citations
- Inventor and Applicant of 5 patents deposited at the Hellenic Industrial Property Organization (the Hellenic Patent Office) and 1 PCT patent
- Coordinator or collaborator in 16 National and 5 European competitively funded projects with incoming funds to NHRF amounting to 2149 K€ (listed below)
- Author of more than 60 peer-reviewed abstracts in National and International Conferences

- Author of 6 papers in conference proceedings, 5 popularization articles and 1 book chapter in collective volume NATO ASI Vol. C295, "Activation of hormone and growth factor receptors: Molecular mechanisms and consequences"
- Participant in more than 130 conference proceedings
- Partial or full supervisor of 18 PhD Thesis, 2 MSc Thesis and more than 35 BSc Thesis. *Fully supervised PhD Thesis*: Irene Mavridou (defended in 1992), Dimitra J Mitsiou (1996), Lia Baki (1997), Despina Syriani (2003), Efrosini S Katsanou (2006), Eugen Dhimolea (2006), Aggeliki K Meligova (2011), Dimitra Siakouli (ongoing). *Partially supervised PhD Thesis*: Efthymia Kitraki (1985), Anastasios Georgakopoulos (1996), Nikolas Fokialakis (2004), Maria Halabalaki (2005), George Lambrinidis (2005), Konstantinos M Kasiotis (2005), Johanne Polasek (2005), Niki I Chantzi (2011), Job Tchoumtchoua (ongoing), Maria Makropoulou (ongoing). *Fully supervised MSc Thesis*: Dimitra Siakouli (2013), Vassiliki Kyriakou (2013). *Selected BSc Thesis*: Irene Roussou (1984), Lia Baki (1986), Maria Grigoriou (1986), Chrissa Kioussi (1987), Anastasios Georgakopoulos (1989), Dimitra J Mitsiou (1989), Maria D Lalioti (1992), Symeon Siniossoglou (1993), Christodoulos Xinaris (2001), Xanthippi Alexi (2001), Aggeliki K. Meligova (2005), Emmanouil Katrantzis (2009)
- Expert Evaluator for EU and National Research-Funding Agencies
- Reviewer in several international scientific journals (British Journal of Cancer, PLoSONE, Endocrine-Related Cancer, Molecular and Cellular Endocrinology, Planta Medica, Journal of Agricultural & Food Chemistry, Bioorganic and Medicinal Chemistry, Toxicology Letters,….)
- Corresponding editor, in "Hormone Molecular Biology and Clinical Investigation"
- Member of the Hellenic Society of Biochemistry and Molecular Biology, the Hellenic Endocrine Society, the Association of Greek Researchers and the Association of Greek Chemists
- Lecturer in the MSc course "Molecular & Applied physiology" of the Medical School of the University of Athens

<u>Honours, awards, distinctions</u>

- Member of the National Advisory Research Council of the Hellenic General Secretariat of Research and Technology (1999-2001)
- President of the 48th Conference of the Hellenic Society of Biochemistry & Molecular Biology (1997)
- Organizer, NATO Advanced Research Workshop on "Molecular mechanisms and consequences of activation of hormone and growth factor receptors", Nafplion, Greece (September 1988)
- Awarded prizes (3) for research work presented at National Conferences

- Awarded the 1st prize of the pan-Hellenic contest in chemistry of the National Scholarship Foundation for doctoral studies abroad (1974)

Recent Research Highlights & Current Research interests

Dr Alexis' research interests aim at, i) understanding the molecular determinants of resistance of Estrogen Receptor alpha (ERα)-positive breast cancer to antiestrogens, ii) elucidating the prognostic and therapeutic significance Estrogen Receptor beta (ERβ) in ERα-negative breast cancer and, iii) developing Selective Estrogen Receptor Modulators (SERMs) with osteoprotective, neuroprotective and/or anticancer activities

Recent Research Highlights

- We produced antibodies to the glucocorticoid receptor (GR), ERα, ERβ1, ERβ2 and ERβ (the sum of ERβ1-5) and validated their performance in many immuno-chemical methods, including immunohistochemistry (IHC) and chromatin immunoprecipitation (ChIP).[1,2] The antibodies were proven to be key tools for probing the genome-wide GR-NFKB interactome,[3] the expression of ERβ1 and ERβ2 in hyperplastic and non-invasive neoplastic breast disease[4] and the clinical significance of ERβ1 and ERβ2 in (ERα)-positive[5] and (ERα)-negative breast cancer.[6] Two antibodies are presently marketed by DIAGENODE SA.[7,8]

  [**1**] Siriani D et al, J Steroid Biochem Mol Biol. 2003 Feb;84(2-3):171-80, [**2**] Chantzi NI et al, Steroids 2011 Sep-Oct;76(10-11):974-85, [**3**] Rao NRA et al, Genome Research 2011 Sep;21(9):1404-16, [**4**] Chantzi NI et al, J Cancer Res Clin Oncol. 2014 Jun;140(6):1057-66, [**5**] Dhimolea E et al, Cancer Lett. 2015 Mar 1;358(1):37-42, [**6**] Chantzi NI et al, Cancer Res Clin Oncol. 2013 Sep;139(9):1489-98, [**7**] ERα monoclonal antibody – Classic (Catalogue No C15100066 / AC-066-100), [**8**] GR monoclonal antibody - Classic (C15200010 / MAb-010-050)

- We recently reported on the synthesis of a series of new stilbenoid derivatives and on their neuroprotective activity as assessed using glutamate-challenged HT22 hippocampal neurons, known to model oxidative stress-induced neuronal cell death.[1] Several of the derivatives displayed neuroprotective activity at the low nM range. In addition, they lacked i) estrogen receptor agonist or antagonist activity, ii) stimulatory activity on breast and endometrial cancer cells and, iii) ability to interfere with aryl hydrocarbon receptor-mediated gene expression. These derivatives are considered as lead neuroprotective agents of low endocrine cancer risk and devoid of side effects due to interference with drug activation and detoxification mechanisms

  [**1**] Villalonga-Barber C et al, Bioorg Med Chem. 2011 Jan 1;19(1):339-51.

Current Research Interests

Dr Alexis' current research tasks in the context of competitively funded projects are:

1. Understanding the molecular determinants of breast cancer resistance to anti-estrogens: Over 60% of primary breast tumours express ERα. The receptor is known to mediate the stimulatory effect of estrogen on tumour growth and the inhibitory effect of antiestrogens, drugs designed to block the effects of estrogen through ERα/ERβ. The antiestrogen Tamoxifen is widely acknowledged to increase progression-free survival and overall survival of patients with ERα-positive breast tumours. However, the vast majority of patients on Tamoxifen monotherapy eventually progresses. Resistance to the drug is mostly due to Tamoxifen-induced upregulation of ERα crosstalk with receptor tyrosine kinases (RTK) of the HER family, mainly EGFR/HER2, and/or with PI3K, key downstream transducer of RTK signalling. Patients that have progressed on Tamoxifen are usually treated with Lapatinib, a dual EGFR/HER2 inhibitor. However, breast tumours are known to escape Lapatinib blockade, while retaining sensitivity to PI3K inhibitors. ERα-positive breast cancer often bears mutations on PI3KCA, (the catalytic subunit of class IA PI3K) and/or loss of phosphatase PTEN (inhibitor of aberrant PI3K activation). We generated breast cancer cell lines bearing loss of PTEN as well as PI3KCA mutations and are currently testing their sensitivity to inhibitors specific for mutant PIK3CA administered either alone or in combination with Tamoxifen as compared to Lapatinib alone and Lapatinib plus Tamoxifen. The inhibitors are generated by the POM consortium (see below) and are tested using the PI3KCA and/or PTEN mutant cells in culture and in mouse xenografts. A genome-wide microarray analysis of these cells' responses to Tamoxifen alone and in combination with a lead inhibitor specific for mutant PIK3CA is expected to reveal markers of response to new combinatorial therapies and, in addition, point to new targets that might be associated with resistance to such therapies. Breast cancer resistance to Tamoxifen could be also due to aberrant activation of NFKB, key transducer of pro-inflammatory signaling. The glucocorticoid receptor (GR) is key transducer of anti-inflammatory signaling. Suppression of NFKB activity by glucocorticoids (GCs) has been shown to restore sensitivity of ERα-positive breast cancer cells to tamoxifen. However, clinical applications of GCs are limited by severe side-effects due to GRE (GR-binding DNA element)-dependent GR-mediated induction of hyperglycemic and osteoporotic actions of GCs. Non-steroidal GR ligands reportedly can dissociate the GRE/inductive from the NFKB/suppressive effects of GCs. A task force of 8 IBMCB researchers is currently involved in the development of dissociated GR ligands. Potential leads will be tested using Tamoxifen-resistant NFKB-overexpressing breast cancer cells in culture and in mouse xenografts. A genome-wide microarray analysis of these cells' responses

to Tamoxifen alone and in combination with a selected lead is expected to suppress resistance to Tamoxifen and reveal the molecular determinants of response to the combinatorial therapy. The above tasks are funded by Research Program **COOPERATION: project 09ΣΥΝ-11-675 (2010-2015**): "PIK3CA Oncogenic Mutations in Breast and Colon Cancers: Development of Targeted Anticancer Drugs and Diagnostics (POM)". Project participants: Genetics Division, BRFAA - Signal-mediated Gene Expression, Molecular Endocrinology and Metabolic Engineering & Bioinformatics Teams, IBCMB, NHRF – BRI, FORTH, ProActina SA, Pharmathen Pharmaceuticals, Bioiatriki SA.; and **KRIPIS: Project STHENOS (2013-2015)**: Targeted therapeutic approaches against ageing and degenerative diseases, cancer in particular". Project Participants: the integral task force of IBMCB researchers.

2. Elucidation of the prognostic and therapeutic significance of ERβ in TNBC: Triple Negative Breast Cancer is known to express ERβ. TNBC represents approx. 15% of breast cancers and is the dominant phenotype in patients-carriers of BRCA1 gene mutations. Previous studies highlighted ERβ1 as potential therapeutic target of Tamoxifen in ERα-negative breast carcinoma. In addition, we recently reported that ERβ2 is associated with poor prognosis in ERα-negative breast carcinoma. However, the prognostic and therapeutic significance of ERβ1 and ERβ2 in TNBC remain essentially unknown. We set out, i) to assess the clinical significance of ERβ1 and ERβ2 in TNBC by associating their immuno-histochemical expression with disease outcome in a cohort of 500 cases of TNBC and, ii) to unravel the molecular determinants of alleged ERβ1 and ERβ2 activity against TNBC cell lines by determining chromatin binding sites and transcriptional read-outs of ERβ1 and ERβ2 in the presence of estrogen and/or tamoxifen. The above tasks are funded by Research Programs **THALES: Project 85355 (2012-15)**: "Molecular sub-typing of Triple Negative Breast Cancer (TNBC)". Project Participants: Department of Medical Oncology, School of Medicine, Univ. of Thessaloniki - Molecular Diagnostics Laboratory, National Centre of Scientific Research 'Demokritos' - Department of Basic Medical Sciences, School of Medicine, Univ. of Athens - Molecular Endocrinology Team, IBMCB, NHRF.

3. Development of SERMs with osteoprotective, neuroprotective and/or anticancer activities: The increase in life expectancy has significantly increased morbidity and mortality due to post-menopausal, endocrine-related diseases, coronary heart disease, senile dementia and osteoporosis, in particular. Substituting for endogenous estrogen with exogenous hormone(s) has been shown to increase the risk for breast and colorectal cancer. SERMs such as raloxifene act as

estrogens in the bone and endothelium and as anti-estrogens in the breast and uterus and therefore constitute a safe alternative to estrogen, especially for high breast/uterine cancer risk subjects. However, long term patients' compliance with SERM treatment is poor and safety of the treatment is limited. The aim of this task is to discover new SERMs of natural or synthetic origin that display significant chemopreventive potential against postmenopausal osteoporosis and hypercholesterolemia, while lacking stimulatory activity in the breast and uterus. This task entails, 1) *in vitro* evaluation and prioritization of ERα/ERβ agonist-antagonist, estrogenic, osteoprotective and neuroprotective activities as well as breast safety of hundreds of new compounds using cell lines, 2) determining the transcriptomic and metabolomics profiles of the compounds that are most active in promoting osteoblastogenesis and/or inhibiting osteoclastogenesis *in vitro* and 3) evaluating the potential of selected lead compounds to prevent hyper-cholesterolemia and osteoporosis in the ovariectomized mouse. The above task is funded by Research Programs **THALES: Project 80038 (2012-15)**: "Development of new selective estrogen receptor modulators for preventing menopause consequences (SERMENCO)". Project Participants: Department of Pharmacognosy & Natural Products Chemistry, School of Pharmacy, Univ. of Athens - Department of Chemistry, Agricultural Univ. of Athens - Molecular Endocrinology Team, IBMCB, NHRF; and **COOPERATION: Project 09SYN-11-1076 (2011-2015)**: "Development of natural products and analogues for osteoporosis prevention: transcriptomic, proteomic & metabolomic approaches". Project Participants: Department of Pharmacognosy & Natural Products Chemistry, School of Pharmacy, Univ. of Athens - Department of Surgery, School of Medicine, Univ. of Athens – Molecular Endocrinology Team, IBMCB, NHRF - Lavipharm SA.

Publications in International referred journals

1. Dhimolea E, Tiniakos DG, Chantzi NI, Goutas N, Vassilaros SD, Mitsiou DJ, Alexis MN. Estrogen receptors β1 and β2 are associated with distinct responses of estrogen receptor α-positive breast carcinoma to adjuvant endocrine therapy. **Cancer Lett.** 2015 Mar 1;358(1):37-42.
2. Chantzi NI, Palaiologou M, Stylianidou A, Goutas N, Vassilaros S, Kourea HP, Dhimolea E, Mitsiou DJ, Tiniakos DG, Alexis MN. Estrogen receptor β2 is inversely correlated with Ki-67 in hyperplastic and noninvasive neoplastic breast lesions. **J Cancer Res Clin Oncol.** 2014 Jun;140(6):1057-66.
3. 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 Jan 27;220(3):207-18.

4. 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 Sep;139(9):1489-98.
5. Roumeliotis TI, Halabalaki M, Alexi X, Ankrett D, Giannopoulou EG, Skaltsounis AL, Sayan BS, Alexis MN, Townsend PA, Garbis SD. Pharmacoproteomic Study of the Natural Product Ebenfuran III in DU-145 Prostate Cancer Cells: The Quantitative and Temporal Interrogation of Chemically Induced Cell Death at the Protein Level. **J Proteome Res**. 2013 Apr 5;12(4):1591-603.
6. Polasek J, Queiroz EF, Marcourt L, Meligova AK, Halabalaki M, Skaltsounis AL, Alexis MN, Prajogo B, Wolfender JL, Hostettmann K. Peltogynoids and 2-Phenoxychromones from Peltophorum pterocarpum and Evaluation of Their Estrogenic Activity. **Planta Med**. 2013 Apr;79(6):480-6
7. Fokialakis N, Alexi X, Aligiannis N, Siriani D, Meligova AK, Pratsinis H, Mitakou S, Alexis MN. Ester and carbamate ester derivatives of Biochanin A: synthesis and in vitro evaluation of estrogenic and antiproliferative activities. **Bioorg Med Chem**. 2012 May 1;20(9):2962-70.
8. Rao NRA, McCalman MT, Moulos P, Francoijs KJ, Chatziioannou A, Kolisis FN, Alexis MN, Mitsiou DJ, Stunnenberg HG. Co-activation of GR and NFKB alters the repertoire of their binding sites and target genes. **Genome Research** 2011 Sep;21(9):1404-16.
9. Koufaki M, Tsatsaroni A, Alexi X, Guerrand H, Zerva S, Alexis MN. Isoxazole substituted chromans against oxidative stress-induced neuronal damage. **Bioorg Med Chem**. Aug 15;19(16):4841-50.
10. 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 Sep-Oct;76(10-11):974-85.
11. Koukoulitsa C, Durdagi S, Siapi E, Villalonga-Barber C, Alexi X, Steele BR, Micha-Screttas M, Alexis MN, Tsantili-Kakoulidou A, Mavromoustakos T. Comparison of thermal effects of stilbenoid analogs in lipid bilayers using differential scanning calorimetry and molecular dynamics: correlation of thermal effects and topographical position with antioxidant activity. **Eur Biophys J**. 2011 Jul;40(7):865-75.
12. Villalonga-Barber C, Meligova AK, Alexi X, Steele BR, Kouzinos CE, Screttas CG, Katsanou ES, Micha-Screttas M, Alexis MN. New hydroxystilbenoid derivatives endowed with neuroprotective activity and devoid of interference with estrogen and aryl hydrocarbon receptor-mediated transcription. **Bioorg Med Chem.** 2011 Jan 1;19(1):339-51.
13. Koufaki M, Theodorou E, Alexi X, Alexis MN. Synthesis of a second generation chroman/catechol hybrids and evaluation of their activity in protecting neuronal cells from oxidative stress-induced cell death. **Bioorg Med Chem**. 2010 Jun 1;18(11):3898-909.

14. Koufaki M, Theodorou E, Alexi X, Nikoloudaki F, Alexis MN. Synthesis of tropolone derivatives and evaluation of their in vitro neuroprotective activity. **Eur J Med Chem**. 2010 Mar;45(3):1107-12.
15. Tchokouaha RF, Alexi X, Chosson E, Besson T, Skaltsounis AL, Seguin E, Alexis MN, Wandji J. Erymildbraedin A and B, two novel cytotoxic dimethylpyrano-isoflavones from the stem bark of Erythrina mildbraedii: evaluation of their activity toward endocrine cancer cells. **J Enzyme Inhib Med Chem**. 2010 Apr;25(2):228-33.
16. Calogeropoulou T, Avlonitis N, Minas V, Alexi X, Pantzou A, Charalampopoulos I, Zervou M, Vergou V, Katsanou ES, Lazaridis I, Alexis MN, Gravanis A. Novel dehydroepiandrosterone derivatives with antiapoptotic, neuroprotective activity. **J Med Chem**. 2009 Nov 12;52(21):6569-87.
17. Alexi X, Kasiotis KM, Fokialakis N, Lambrinidis G, Meligova AK, Mikros E, Haroutounian SA, Alexis MN. Differential estrogen receptor subtype modulators: assessment of estrogen receptor subtype-binding selectivity and transcription-regulating properties of new cycloalkyl pyrazoles. **J Steroid Biochem Mol Biol**. 2009 Nov;117(4-5):159-67.
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19. Koufaki M, Kiziridi C, Alexi X, Alexis MN. Design and synthesis of novel neuroprotective 1,2-dithiolane/chroman hybrids. **Bioorg Med Chem**. 2009 Sep 1;17(17):6432-41.
20. Ioannou E, Abdel-Razik AF, Alexi X, Vagias C, Alexis MN, Roussis V. 9,11-Secosterols with antiproliferative activity from the gorgonian Eunicella cavolini. **Bioorg Med Chem**. 2009 Jul 1;17(13):4537-41.
21. Halabalaki M, Alexi X, Aligiannis N, Alexis MN, Skaltsounis AL. Ebenfurans IV-VIII from Onobrychis ebenoides: Evidence that C-Prenylation is the Key Determinant of the Cytotoxicity of 3-Formyl-2-arylbenzofurans.**J Nat Prod**. 2008 Nov;71(11):1934-7.
22. Ioannou E, Abdel-Razik AF, Zervou M, Christofidis D, Alexi X, Vagias C, Alexis MN, Roussis V. 5alpha,8alpha-Epidioxysterols from the gorgonian Eunicella cavolini and the ascidian Tridemnum inarmatum: isolation and evaluation of their antiproliferative activity. **Steroids**. 2009 Jan;74(1):73-80.
23. Ioannou E, Abdel-Razik AF, Alexi X, Vagias C, Alexis MN, Roussis V. Pregnanes with antiproliferative activity from the gorgonian Eunicella cavioloni. **Tetrahedron** 2008; 64:11797–11801.
24. Tenta R, Pitulis N, Tiblalexi D, Consoulas C, Katopodis H, Konstantinidou E, Manoussakis M, Kletsas D, Alexis MN, Poyatzi A, Koutsilieris M. Mechanisms of the action of zoledronic acid on human MG-63 osteosarcoma cells. **Horm Metab Res**. 2008 Nov;40(11):737-45.
25. Bakas P, Liapis A, Vlahopoulos S, Giner M, Logotheti S, Creatsas G, Meligova AK, Alexis MN, Zoumpourlis V. Estrogen receptor alpha and beta in uterine fibroids: a basis for altered estrogen responsiveness. **Fertil Steril**. 2008 Nov;90(5):1878-85.
26. Voutsas IF, Gritzapis AD, Alexis MN, Katsanou ES, Perez S, Baxevanis CN, Papamichail M. A novel quantitative flow cytometric method for measuring glucocorticoid receptor

(GR) in cell lines: correlation with the biochemical determination of GR. **J Immunol Methods**. 2007 Jul 31;324(1-2):110-9.

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29. Katsanou ES, Halabalaki M, Aligiannis N, Mitakou S, Skaltsounis AL, Alexi X, Pratsinis H, Alexis MN. Cytotoxic effects of 2-arylbenzofuran phytoestrogens on human cancer cells: modulation by adrenal and gonadal steroids. **J Steroid Biochem Mol Biol**. 2007 May;104(3-5):228-36.
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Patents

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2. Alexis MN, Dimolea E, Florentin I, Pechtelidou A and Sekeris CE. "Monoclonal and polyclonal antibodies to glucococorticoid and estrogen receptors as immunodiagnostics for cancer prognosis". **O.B.I. 1005417**–issued 31/01/2007
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Competitively Funded Projects

1. Research Funding Program KRIPIS: Project STHENOS: "Targeted therapeutic approaches against ageing and degenerative diseases, cancer in particular", 2013-2015.
2. Research Funding Program THALES: Project 80038: "Development of new selective estrogen receptor modulators for preventing menopause consequences (SERMENCO)", 2012-2015.

3. Research Funding Program THALES: Project 85355: "Molecular sub-typing of Triple Negative Breast Cancer (TNBC)", 2012-2015.
4. National action 'Cooperation' – Sub-action I: Medium & Small Scale Cooperative Projects: "Development of natural products and analogues for osteoporosis prevention: transcriptomic, proteomic and metabolomic approaches (OSTEOPRO)", 09ΣΥΝ-11-1076, 2011-2015.
5. National action 'Cooperation' – Sub-action II: Large Scale Cooperative Projects: "PIK3CA Oncogenic Mutations in Breast and Colon Cancers: Development of Targeted Anticancer Drugs and Diagnostics (POM)", 09ΣΥΝ-11-675, 2010-2015.
6. EU Initial Training Network (ITN)**,** "A European Research Training Site for the Design and Synthesis of Novel Neuroprotective and Hypoglycaemic Agents through a Multi-disciplinary approach", MTKD-CT-2006-020575**,** 2006-2010.
7. EU Network of Excellence "ECNIS – Environmental Cancer risks, Nutrition and Individual Susceptibility', FOOD-CT-2005-513943**,** 2005-2010.
8. Greek Framework Program Competitiveness- Research Network PENED**,** "In search of a role for estrogen receptor beta in breast cancer"**,** 03ΕΔ644**,** 2006-2009.
9. EU Transfer of Knowledge (TOK) Program**, "**Macromolecular assemblies involved in regulated gene expression", MTKD-CT-2004-509836**,** 2004-2008.
10. Greek Framework Program Competitiveness - Research Network DSBEPRO, "Assessment of the estrogenic activity of natural compounds and derivatives thereof", 02DSBEPRO32, 2006-2008.
11. Greek Framework Program Competitiveness - Research Network EUREKA, "Novel Selective Estrogen Receptor Modulators: Synthesis and evaluation of biological activities", EUREKA E!3060-SERMS, 2004-2007.
12. Greek Framework Program Competitiveness- Research Network PENED**,** "Neurosteroids; Investigation of the mechanism of action of neurosteroids as neuroprotective agents; Development of new neurosteroids of high neuroprotective and marginal hormonal activity"**,** 01ΕΔ258**,** 2002-06.
13. Greek Framework Program Competitiveness - funding scheme PRAKSE, "Tissue-specific antiestrogens", 02PRAKSE97, 2003-2005.
14. Greek Framework Program Competitiveness - funding scheme PRAKSE, "Immunodiagnostics for breast cancer prognosis", 02PRAKSE98, 2003-2005.
15. Greek Framework Program Competitiveness - research network PAVET, "Immunochemical tools for breast cancer prognosis", PAVET2000-00BE199, 2001-2004.
16. EU Marie Curie Development Host (HD) Research Program, "Regulation of transcription and mRNA processing by oncogenic signals", HPMD-CT-2001-00116, 2002-2005.
17. EU Marie Curie Training and Mobility Program, "Effect of glucocorticoid receptor beta isoform on glucocorticoid signaling", HPMF-CT-2000-00904, 2001-2002.
18. Greek Framework Program EPET-II – research network EKVAN, "Development of new methods for prognosis and treatment of hormone-dependent cancer", EKVAN66, 1998-2001.

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20. Greek Framework Program EPET-II – funding scheme PENED, "The Thermotolerant Human Cell as a Protein Production System", 95ED784, 1996-1997.
21. Greek Framework Program EPET-I – funding scheme 1.4, "Steroid Receptors as Biological Markers of Tumor Responsiveness to Endocrine Therapy", 14EIE5, 1990-1993.

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