

## **Vasiliki PLE TSA**

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### **Education**

1991: Ph. D degree in Biological Sciences, Faculty of Biology, School of Sciences, National Kapodistrian University of Athens

PhD Thesis: “Mutagenesis and activation of the human Ha-ras proto-oncogene by alkylating carcinogens”

1984: Bachelor’s Degree (BSc), Faculty of Biology, School of Sciences, National Kapodistrian University of Athens

### **Appointments**

2018-present: Research Associate Professor, National Hellenic Research Foundation, Institute of Biology, Medicinal Chemistry and Biotechnology, Chemical Carcinogenesis and Genetic Toxicology Programme

2003-2018: Research Assistant Professor, National Hellenic Research Foundation, Institute of Biology, Medicinal Chemistry and Biotechnology, Chemical Carcinogenesis and Genetic Toxicology Programme

1995-2003: Functional Research Scientist

In charge of the development of the GMO Detection Laboratory of the Institute of Biological Research and Biotechnology of the National Hellenic Research Foundation. In this context novel, sensitive molecular biology-based methods of detection were applied and service to the industry and national authorities was provided while applied research projects concerning GMO detection in food and feed were carried out.

1992-1995: Post doctoral Researcher, National Hellenic Research Foundation, Institute of Biological Sciences and Biotechnology, Chemical Carcinogenesis and Genetic Toxicology Programme

1991: Post doctoral Fellow ( Fellowship by European Science Foundation, DNA Repair Network and C.N.R.S.), Centre National de Recherches Scientifiques C.N.R.S., Institut de Recherches Scientifiques sur le Cancer, Laboratoire de Genetique Moleculaire, Villejuif, France

## Sabbatical Leaves

2004: six months sabbatical leave, Department of Toxicogenetics, Sylvius Laboratories, Leiden University Medical Center, Wassenaarseweg72, 2333AL Leiden, The Netherlands

Work on the mechanisms of mutagenesis induced by the Translesion Synthesis polymerases.

## Secondments

May 2008-May 2012: General Secretariat for Research and Technology, Ministry of Education, International S&T Cooperation Directorate, European Union Division

Main tasks regarding the integration of the European Research Area, the Europe 2020 agenda as well as the Science & Technology issues in the Black Sea Economic Cooperation, Member of the Greek Delegation in the EU ERAC (European Research Area Committee)-High Level Groups GPC, SFIC and Steering Group on Human Resources and Mobility.

## Teaching and Supervision experience

### *Graduate theses*

2017-2018: supervision of the Graduate Theses of N. Georgakopoulos “Nanodispersions as carriers of bioactive compounds. Applications in anticancer therapy” and E. Vlahou “Investigation of Prebiotic, Immunomodulating and Anti-cancer activity of *Pleurotus ostreatus* και *Ganoderma lucidum*, edible mushrooms of the Greek flora”, Faculty of Biology, School of Science, NTUA.

2015-2016: supervision of the Graduate Thesis of S. Vrettou “Delivery of bioactive compounds through microemulsions in melanoma cells”, University of Thessaly, School of Health Sciences, Department of Biochemistry & Biotechnology.

2007: supervision of the Graduate Theses of A. Dimozi, Faculty of Biology, School of Science, NTUA and V. Bartzos, Department of Molecular Biology and Genetics, Democritus University of Thace.

### *Ph D theses*

2018-present: supervision of the Ph D thesis “Prebiotic, Immunomodulating and Anti-cancer activity of  $\beta$ -glucans: a mechanistic study”, M. Vlassopoulou, Harokopio University, Department of Nutrition and Dietetics (ongoing in NHRF and HUA).

2016-present: supervision of the Ph D thesis “Development of Nanodispersions as carriers of bioactive compounds. Biological applications”, Ioanna Theochari, University of Thessaly, School of Health Sciences, Department of Biochemistry & Biotechnology (ongoing in NHRF).

2010-2016: supervision of the Ph D thesis “Impact of beta-glucan on the intestinal microbiota of a high risk colon population (polypectomised patients)”, Katjia Turunen, Harokopio University, Department of Nutrition and Dietetics, Athens 2016.

2006-2010: supervision of the Ph D thesis “Study on the mechanism of cell death induced by methylating agents”, A. Koryllou, Medical School of Athens, NTUA, Athens 2010.

### *Teaching*

2019-present: “Oncology: from Oncogenesis to Therapy” interdepartmental postgraduate programme, Joint Master’s Degree, University of Crete/National Hellenic Research Foundation.

2015-present: “Bioentrepreneurship” <http://bioepixirin.bio.uth.gr/>, interdepartmental, interdisciplinary postgraduate programme, Joint Master’s Degree, University of Thessaly/National Hellenic Research Foundation. Member of the Interdepartmental and Coordination Committee.

2006-present: regular lectures on “The Biotechnology Challenge; the recombinant DNA technology in Food, is this a threat for Public Health and Environment?”, in the context of the postgraduate programmes “Environmental risks and Food Safety”, Harokopian University of Athens and “Microbial Biotechnology”, Faculty of Biology, NTUA. Lecture on “Mechanisms of Cell Death and Immunoresponse in cancer” in the context of the postgraduate programme “Clinical Biochemistry-Molecular Diagnostics”, Faculty of Biology, NTUA.

2004-2008: teaching of the course “Genetic Technology” in the Health Professions School. Technological Institute of Athens.

### **Current Research Interests**

- DNA damage response and mechanisms of cell death
- molecular mechanisms of carcinogenesis,
- molecular epidemiology of cancer, identification and validation of biomarkers for cancer prevention and early diagnosis
- nutrition and cancer

### **Recent Research projects**

RESEARCH- CREATE-INNOVATE («ΕΡΕΥΝΩ - ΔΗΜΙΟΥΡΓΩ - ΚΑΙΝΟΤΟΜΩ») ESPA 2014-2020 National Programme: FUNGLUCAN 2018-2021 “Development of a novel functional food enriched with  $\beta$ -glucans isolated from edible mushrooms of Greek habitats”. NHRF Principal Investigator: V. Pletsa, Budget: 330.000 euros

STHENOS-b ESPA 2014-2020 National Programme: “Targeted therapeutic approaches against degenerative diseases with special focus on cancer and ageing-optimisation of the targeted bioactive molecules” WP3, 4 and 5.

MEDSPRING EU FP7 INCO project 2013-2017: Mediterranean Science, Policy, Research & Innovation Gateway (<http://medspring.eu/>)

ERANETMED EU FP7 project 2013-2017: EURO-MEDITERRANEAN Cooperation through ERANET joint activities and beyond (<http://www.eranetmed.eu/>).

KRIPIS - STHENOS ESPA 2007-2013 National Programme : “Targeted therapeutic approaches against degenerative diseases” WP3 and 4, investigation of possible hnRNPs alterations during the p53-dependent apoptotic cell death/WP6 “Management and Dissemination”

## Publications

1. Koutrotsios, G.; Patsou, M.; Mitsou, E.K.; Bekiaris, G.; Kotsou, M.; Tarantilis, P.A.; Pletsa, V.; Kyriacou, A.; Zervakis, G.I. (2019) Valorization of Olive By-Products as Substrates for the Cultivation of *Ganoderma lucidum* and *Pleurotus ostreatus* Mushrooms with Enhanced Functional and Prebiotic Properties. *Catalysts* , 9, 537.
2. Theochari I, Papadimitriou V, Papahatzis D, Assimomytis N, Pappou E, Pratsinis H, Xenakis A, Pletsa V (2018) "Oil-in-water microemulsions as hosts for benzothioephene-based cytotoxic compounds: an effective combination" *Biomimetics* 2018,3,13; doi:1033.90/biomimetics3020013.
3. Papadodima O, Moulos P, Koryllou A, Piroti G, Kolisis F, Chatziioannou A, Pletsa V. (2016) Modulation of Pathways Underlying Distinct Cell Death Mechanisms in Two Human Lung Cancer Cell Lines in Response to SN1 Methylating Agents Treatment. *PLoS One*. 28;11(7):e0160248. doi: 10.1371/journal.pone.0160248.
4. Turunen KT, Pletsa V, Georgiadis P, Triantafillidis JK, Karamanolis D, Kyriacou A. (2016) Impact of  $\beta$ -glucan on the Fecal Water Genotoxicity of Polypectomized Patients. *Nutr Cancer*. 68(4):560-7. doi:10.1080/01635581.2016.1156713.
5. Michailidi C, Theocharis S, Tsourouflis G, Pletsa V, Kouraklis G, Patsouris E, Papavassiliou AG, Troungos C. (2015) Expression and promoter methylation status of hMLH1, MGMT, APC, and CDH1 genes in patients with colon adenocarcinoma. *Exp Biol Med (Maywood)*. 2015 Dec;240(12):1599-605. doi: 10.1177/1535370215583800.
6. Papadodima, O, Chatziioannou A, Patrino-Georgoula M, Kolisis FN, Pletsa V, Guialis A. (2013) HuR-regulated mRNAs associated with nuclear hnRNP A1-RNP complexes. *Int J Mol Sci*. 14(10):20256-81. doi: 10.3390/ijms141020256.
7. Koryllou, A., Patrino-Georgoula, M., Dimozi, A., Kyrtopoulos, S.A., Pletsa, V. (2011) Investigation of Cell Death Induced by N-Methyl-N-Nitrosourea in Cell Lines of Human Origin and Implication of RNA Binding Protein Alterations. *Anticancer Res*. 31(12): 4291-9. PMID: 22199294.
8. Georgiadis P, Kaila S, Makedonopoulou P, Fthenou E, Chatzi L, Pletsa V, Kyrtopoulos SA. (2011) Development and validation of a new, sensitive immunochemical assay for O<sup>6</sup>-methylguanine in DNA and its application in a population study. *Cancer Epidemiol Biomarkers Prev*. 20(1):82-9 doi: 10.1158/1055-9965.EPI-10-0788.
9. Koryllou, A., Patrino-Georgoula, M., Troungos, C., Pletsa, V. (2009) Cell death induced by N-methyl-N-nitrosourea, a model SN1 methylating agent, in two lung cancer cell lines of human origin. *Apoptosis*, Vol.14 (9):21-33. doi: 10.1007/s10495-009-0379-x.
10. Batrinou, AM., Koraki, D., Sinanoglou, V., Karagouni, A. & Pletsa, V. (2008) Effect of electron beam irradiation on the quantification of genetically modified foods. *Food Biotechnology*, Vol.22 :338-351.

11. Pletsa, V., Koryllou, A., Patrino-Georgoula, M, Roos, W, Kyrtopoulos, S.A., Guialis, A. (2006) Molecular mechanism of methylating agent-induced apoptosis: identification of novel chemosensitivity markers. *The FEBS Journal* 273, S (1).
12. Pletsas, D., Wheelhouse, R.T., Pletsa, V., Nicolaou, A., Bibby, M.C., Jenkins, T.C. & Kyrtopoulos, S. A. (2006) Polar, functionalized guanine O6 derivatives resistant to repair by alkylguanine-DNA alkyltransferase: implications for the design of DNA-modifying drugs. *European Journal of Medicinal Chemistry*, 41, 330-339. DOI: 10.1016/j.ejmech.2005.11.007.
13. Batrinou AM, Dimitriou E, and Liatsos DN & Pletsa, V (2005). Genetically modified foods: the effect of information. *Nutrition and Food Science*, 35 (3).
14. Pletsa, V., Steenwinkel, M.J.T., Stoikidou, M., van Delft, J.H.M., Baan, R.A., Katsouyanni, K. & Kyrtopoulos, S.A. (2002) Monitoring for DNA damage of humans occupationally exposed to methylbromide. *Anticancer Research*, 22, 997-1000. PMID: 12014684.
15. Pletsa, V., Steenwinkel, M.J.T., van Delft, J.H.M., Baan, R.A. & Kyrtopoulos, S.A. (1999) Methylbromide causes DNA methylation in rats and mice but fails to induce somatic mutation in lacZ transgenic mice. *Cancer Letters*, 135, 21-27. PMID: 10077217.
16. Pletsa, V., Steenwinkel, M.J.T., van Delft, J.H.M., Baan, R.A. & Kyrtopoulos, S.A. (1999) Induction of somatic mutations but not methylated DNA adducts in lacZ transgenic mice by dichlorvos. *Cancer Letters*, 149, 1-6. PMID: 10077217.
17. Pletsa, V., Valavanis, C., van Delft, J.H.M., Steenwinkel, M.J.T. & Kyrtopoulos, S.A. (1997) DNA damage and mutagenesis induced by procarbazine in lacZ transgenic mice: evidence that bone marrow mutations do not arise primarily through miscoding by O6-methylguanine. *Carcinogenesis*, 18, 2191-2196. PMID: 9395220.
18. Kyrtopoulos, S.A., Anderson, L.M., Chhabra, S.K., Souliotis, V.L., Pletsa, V., Valavanis, C. & Georgiadis, P. (1997) DNA adducts and the mechanism of carcinogenesis and cytotoxicity of methylating agents of environmental and clinical significance. *Cancer Detection and Prevention*, 21, 391-405. PMID: 9307842.
19. Pletsa, V., Troungos, C., Souliotis, V.L. & Kyrtopoulos, S.A. (1994). Comparative study of mutagenesis by O6-methylguanine in the human Ha-ras oncogene in E.coli and in vitro. *Nucleic Acids Research*, 22, 3846-3853. PMCID: PMC308379.
20. Pletsa, V., Gentil, A., Margot, A., Armier, J., Kyrtopoulos, S.A. & Sarasin, A., (1992) Mutagenesis by O6-meG residues within codon 12 of the human Ha-ras proto-oncogene in monkey cells. *Nucleic Acids Research*, 20, 4897-4901. PMCID: PMC334248.
21. Troungos, C. & Pletsa, V. (1991) Ras oncogenes and human carcinogenesis. *Review of Clinical Pharmacology and Pharmacokinetics*, 9, 224-233.

### **Book Chapters in collective volumes**

1. T. Varzakas and V. Pletsa "Genetically Modified Herbicide-Tolerant Crops and Sugar Beet-Environmental and Health Concerns" Chapter in "Sweeteners: Nutritional Aspects, Applications, and Production Technology, published May 14, 2012 by CRC Press

2. Ανθιμία Μπατρίνου και Βασιλική Πλέτσα «Γενετικά Τροποποιημένα Τρόφιμα. Πόσο απειλούν τη δημόσια υγεία; » Κεφάλαιο 25 στο βιβλίο ΚΛΙΝΙΚΗ ΔΙΑΤΡΟΦΗ, επιμέλεια Ν. Κατσιλάμπρος, ΒΗΤΑ Ιατρικές Εκδόσεις ΜΕΠΕ, [www.betamedarts.gr](http://www.betamedarts.gr)

3. Βασιλική Πλέτσα «Η Πρόκληση των Γενετικά Τροποποιημένων», στο βιβλίο «Η ΔΙΑΤΡΟΦΗ ΣΤΟΝ 21<sup>0</sup> ΑΙΩΝΑ : Γεωγραφίες της αφθονίας και της στέρησης», Εκδόσεις Παπαζήση, Αθήνα 2005.

### **Professional Activities**

Evaluator/Reviewer in National and EU Calls

Science communication to the public, students and pupils regularly, within the frame of dedicated events (i.e. Researcher's Night, Science and Technology Festival, NHRF's Science & Society annual events; [www.eie.gr/nhrf/institutes/ibmcb/index-en-ibcmb.html](http://www.eie.gr/nhrf/institutes/ibmcb/index-en-ibcmb.html)).

### **Commitee membership**

Member of the European Enviromental Mutagen Society (EEMS)

Member of the Hellenic Society for Biochemistry and Molecular Biology (HSBMB)

Member of the Hellenic Scientific Society "MIKROBIOKOSMOS"

President of the ICB Bioethics Committee