

CURRICULUM VITAE

February 2014

PERSONAL DATA



Last Name: LEKKA
First Name: MARIA-ELENI E.
Date, place of birth: Kos Dodecanese, Greece, 31-12-1954
Nationality: Greek
Position: Professor

Professional Address	University of Ioannina Chemistry Department 451 10 Ioannina Greece	Tel: +3026510 08367 FAX: +3026510 08774 E-mail address: mlekka@cc.uoi.gr http://www.chem.uoi.gr/en/node/138
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PROFESSIONAL FORMATION: STUDIES / POSITIONS / SABBATICAL LEAVES

1977	Diploma in Chemistry, Aristotelean University of Thessaloniki, Chemistry Department
1979-1980	In charge of quality control: Industry of raw materials "Koropoulos A.E"
1980	Research assistant, University of Ioannina, Chemistry Department
1987	PhD in Chemistry-Biochemistry, University of Ioannina, Chemistry Department
1988	Research Fellow: INSERM U-200, Paris. Director: J. Benveniste. Subject: "Enzymes involved on the metabolism of platelet-activating factor (PAF)"
1989	Lecturer, University of Ioannina, Chemistry Department
1989, 1990	Post Doctoral fellow: University of Texas at San Antonio, Health Science Center, Biochemistry Dept. Director: D.J. Hanahan. Subject: "Isolation and chemical characterisation of endogenous inhibitors of PAF"
1993	Assistant Professor University of Ioannina, Chemistry Department
1994	Research Fellow: University of Kuopio, Finland, Dept of Physiology. Director: O. Hanninen. Subject: "Xenobiotic enzymes"
1996, 1998, 2001	Visiting Professor: University of Bordeaux-2 France, Department of Life Sciences, Laboratory of Membrane Biogenesis. Director: C. Cassagne. Subject: "Anti-lipid autoantibodies in bronchoalveolar lavage fluid of patients with ARDS"
2002	Associate Professor University of Ioannina, Chemistry Department
2011	Professor University of Ioannina, Chemistry Department

RESEARCH INTERESTS

- **Lipid analysis** GLC, HPLC, MS (FAB, EI), LC-MS/MS
- **Phospholipase A₂ quantitation assays**
- **Phospholipid Biochemistry.** Metabolic pathways. CDP-choline:cholinephosphotransferase, PAF-acetyltransferase, isoenzymes of phospholipase A₂ and PAF-acetylhydrolase. Platelet-activating factor (PAF). sPLA₂ translocation and regulation of secretion
- **Inflammation and apoptosis in lung parenchyma of critically ill patients:** Biochemical and immunochemical study of Bronchoalveolar lavage fluid (BAL); Antiphospholipid antibodies; Lung surfactant alterations in patients with lung injury; role of lipid mediators and cytokines in lung injury resulting in lung surfactant deficiency.
- **Mechanotransduction in lung cells:** Regulation of lung surfactant metabolism
- **Xenobiotic enzymes** in *Tetrahymena pyriformis* and *Lemna minor*.

TEACHING EXPERIENCE

Undergraduate programme

- «Practical Biochemistry», Chemistry Dept, University of Ioannina (1981-today)
- Biological membranes: Structure and function (1991-today)
- “Introduction in Biochemistry, intermediary metabolism”, “Lipids and Biological membranes” Chemistry Dept, University of Ioannina (1997-today)
- “Hormone Action” Univ. Bordeaux-2, Dept Biologie-Santé, ESTBB (1996,1998, 2001)

Graduate programme

- “Physical Biochemistry (radioisotopic analysis, chromatography)” (1995-2002)
- “Chemistry and Biochemistry of lipids and biological membranes” (2002-today)
- “Laboratory exercises in membrane biochemistry” (2002-today)
- “Signal transduction / Signaling pathways” (2002-today)

PATENTS

Lekka Maria-Eleni, Karkabounas Athanassios, University of Ioannina Research Committee, «Immobilization of lipid substrates in order to develop and evaluate a fluorimetric assay for the determination of phospholipase A₂ activity in biological samples». INDUSTRIAL PROPERTY ORGANIZATION, GR1007801 (2011)

BOOK AUTHORSHIP

Student Notes

1. Biochemistry Experiments (2001, in Greek, 6 co-authors)
2. Structure and Function of Biological Membranes. Membrane Transport (2004, in Greek)

Books / Chapters

1. Greek-English Dictionary of Terminology in Biochemistry, Molecular Biology and Biotechnology (Ioannina 1995, Hellenic Society for Biochemistry and Molecular Biology (HSBMB), Hellenic Society of Biochemistry and Biophysics, Hellenic Society of Biotechnology). ISBN 960-7516-00-1 (7 co-authors).
2. M.E. Lekka «Oxidation products in biological systems» in “Update in critical care medicine / “Oxygen” (G. Nakos, M.E. Lekka eds.), ISSN 1108-9908, Ioannina, 1999, vol 4, pp. 157-163 (in greek)
3. M.E. Lekka «Oxygen metabolism» In “Update in critical care medicine”: “Oxygen” (G. Nakos, M.E. Lekka eds.), ISSN 1108-9908, Ioannina, 1999, vol 4, pp. 165-171 (in greek).
4. Kitsioulis, E., Nakos, G., Lekka M.E. (1999). Fluorimetric determination of phospholipase A₂ and PAF-acetylhydrolase in biological fluids: The effect of protein. In “Lipases and Lipids: Structure, Function and Biotechnological applications”, G. Kokotos and V. Konstantinou-Kokotou, Crete University Press, Heraklion, 253-263. *Lipases and Lipids*; p. 59-66.
5. ME Lekka, A Karkabounas, Ei Kitsioulis, «Surface tension and tensioactive substances » In “Update in critical care medicine” “Surfactant” (G Nakos, ME Lekka eds.), ISSN 1108-9908, Ioannina, 2002, vol 6, pp 1-10 (in greek).
6. Ei Kitsioulis, ME Lekka. «Composition and production of lung surfactant » In “Update in critical care medicine” “Surfactant” (G Nakos, ME Lekka eds.), ISSN 1108-9908, Ioannina, 2002, vol 6, pp 11-25 (in greek).
7. S. Matalon, P. O’ Reilly, J. M. Jickman-Davis, M.E. Lekka, G. Nakos (2002). “The role of nitric oxide in lung innate immunity: Modulation by surfactant protein A” στο “Update in critical care medicine” “Surfactant” (G Nakos, ME Lekka eds. eds.), ISSN 1108-9908 Ioannina, 2002, vol 6, pp 59-71 (in greek).
8. ME Lekka, Ch Massalas. «Mechanotransduction» In “Update in critical care medicine” / “Ventilator-Induced Lung Injury / Ventilator-Associated Lung Injury” (G Nakos ed.), ISSN 1108-9908, Ioannina, 2004, vol 7, pp 29-47 (in greek).
9. E.I. Kitsioulis, G. Nakos, and ME. Lekka. (2004). “Phospholipases A₂ levels and distribution in bronchoalveolar lavage fluid of patients with acute respiratory distress syndrome and application of a fluorimetric method” in C. A. Burtis, M. M. Muler (eds) “Advances in Critical Care testing: The IFCC-Roche Diagnostic Award”. ISBN 3-540-40752-9 Spriger Verlag (Berlin, Heidelberg, NY). [Kitsioulis, E., Nakos, G., and Lekka, M.E. Phospholipases A₂ levels and distribution in bronchoalveolar lavage fluid of patients with Acute respiratory Distress Syndrome (ARDS): Application of a fluorimetric method. **Roche Award 2002 / International Federation of Clinical Chemistry (IFCC)- 18th International Congress of Clinical Chemistry and Laboratory Medicine**, 20-25 Oct 2002, Kyoto, Japan *Proceedings*]
10. E Hatzidaki, E Hatziantoniou, E Letsiou, ME Lekka «Phospholipases A₂ in sepsis ». In Update in critical care medicine, ISSN 1108-9908 Ioannina 2006 vol 8, pp. 123-133 (in greek).
11. Pantazi D., Lekka ME “Production and secretion of pulmonary surfactant by type II pneumocytes”. In “Surfactant in Pathogenesis and Treatment of Lung Disease”, (G Nakos, A Papathanasiou Eds), Research Signpost, 37/661 (2), ISBN:978-81-308-0343-2, 2009, Fort P.O., Trivandrum-695 023, Kerala, India, pp. 1-24.

SELECTED PUBLICATIONS

1. Lekka, M., Tokumura, A., Tsuji, H. and Hanahan, D.J. (1993). "Isolation of a phospholipid inhibitor of platelet

- activating factor-induced activity from perfused rat liver: Identification as phosphatidylglycerol". Arch. Biochem. Biophys. 302, 380-384
2. Kitsioulis E.I., Nakos G., and Lekka M.E. (1999) "Differential determination of phospholipase A₂ and PAF-acetylhydrolase in biological fluids using fluorescent substrates". J. Lipid Res. 40, 2346-2356.
 3. L. Maneta-Peyret, E.I. Kitsioulis, G. Nakos, M. Lekka and C. Cassagne (2001) "Auto-antibodies to lipids in bronchoalveolar lavage fluid of patients with adult respiratory distress syndrome" Crit. Care Med., 29, 1950-1954
 4. G. Nakos, V. Mitsi, K. Karassavoglou, A. Lachana and M. Lekka (2002) Immunoparalysis in patients with severe trauma and the effect of inhaled interferon Crit. Care Med. 30 (7): 1488-1494
 5. Tsangaris I, Lekka ME., Kitsioulis Ei, Costantopoulos S and Nakos G. (2003) Bronchoalveolar Lavage alterations during prolonged ventilation of patients without Acute Lung Injury Eur. Resp. J. 21(3):495-501
 6. G. Kostopanagiotou, C. Routsis, V. Smyrniotis M. E. Lekka, E. Kitsioulis, N. Arkadopoulous and G. Nakos, (2003) "Alterations in bronchoalveolar lavage fluid during fulminant hepatic failure" Hepatology 37(5):1130-1138
 7. Tellis, C., Pantazi, D., Ioachim E., Galani V. and Lekka, M.E. (2003). "Localization of an alkyl-acetyl-glycerol-CDP-choline: cholinephosphotransferase activity in submitochondrial fractions of Tetrahymena pyriformis" Eur. J. Cell Biol. 82(11): 573-578.
 8. Lekka ME, Liokatis S., Nathanail C., Galani V. and Nakos G. (2004). The impact of intravenous fat emulsion administration in acute lung injury. Am J Respir Crit Care Med. 169(5): 638-644.
 9. Nakos G, Kitsioulis E, Hatzidaki E, Koulouras V, Touqui L, Lekka ME. (2005) Phospholipases A₂ and platelet-activating-factor acetylhydrolase in patients with acute respiratory distress syndrome Crit Care Med. 33(4):772-779 Comment in: Crit Care Med. 2005 Apr;33(4):904-905.
 10. Pantazi D, Drougas E, Loppinet B, Tellis C, Kosmas AM, Lekka ME (2006) Hydrolysis by phospholipase D of phospholipids in solution state or adsorbed on a silica matrix Chem Phys Lipids. 139(1): 20-31.
 11. Nakos G, Batistatou A, Galiatsou E, Konstanti E, Koulouras V, Kanavaros P, Doulis A, Kitsakos A, Karachaliou A, Lekka ME, Bai M (2006) Lung and 'end organ' injury due to mechanical ventilation in animals: comparison between the prone and supine positions. Crit Care 10(1):R38.
 12. Kostopanagiotou GG, Kalimeris KA, Arkadopoulous NP, Pafiti A, Panagopoulous D, Smyrniotis V, Vlahakos D, Routsis C, Lekka ME, Nakos G (2009) Desferrioxamine attenuates minor lung injury following surgical acute liver failure. Eur Respir J. 33(6):1429-1436
 13. Kitsioulis E, Nakos G, Lekka ME (2009) Phospholipase A₂ subclasses in acute respiratory distress syndrome. Biochim Biophys Acta.; 1792(10):941-953. (REVIEW)
 14. Spyridakis S, Leondaritis G, Nakos G, Lekka ME, Galanopoulou D (2010) A specific phospholipase C activity regulates phosphatidylinositol levels in lung surfactant of patients with acute respiratory distress syndrome. Am J Respir Cell Mol Biol. 42(3):357-362.
 15. Maniatis NA, Letsiou E, Orfanos SE, Kardara M, Dimopoulou I, Nakos G, Lekka ME, Roussos C, Armaganidis A, Kotanidou A (2010) Inhaled activated protein C protects mice from ventilator-induced lung injury. Crit Care.;14(2):R70
 16. Hatzidaki E, Nakos G, Galiatsou E, Lekka ME (2010) Impaired phospholipases A₂ production by stimulated macrophages from patients with acute respiratory distress syndrome. Biochim Biophys Acta. 1802(11):986-994.
 17. Letsiou E, Kitsioulis E, Nakos G, Lekka ME (2011) Mild stretch activates cPLA₂ in alveolar type II epithelial cells independently through the MEK/ERK and PI3K pathways. Biochim Biophys Acta. 1811(6):370-376.
 18. Karkabounas A, Kitsioulis EI, Nakos G, Lekka ME (2011) HPLC-fluorimetric assay of phospholipase A₂. Application to biological samples with high protein content and various reaction conditions. J Chromatogr B Analyt Technol Biomed Life Sci. 879(19):1557-1564.
 19. Pantazi D, Kitsioulis E, Karkabounas A, Trangas T, Nakos G, Lekka ME. (2013) Dipalmitoyl-phosphatidylcholine biosynthesis is induced by non-injurious mechanical stretch in a model of alveolar type II cells. Lipids 48(8):827-838

DISTINCTIONS / AWARDS

- G. Nakos, V. Mitsi, K. Karassavoglou, A. Lachana, and **M. Lekka** (2002) Immunoparalysis in patients with severe trauma and the effect of inhaled interferon *Crit. Care Med.* **30 (7)**: 1488-1494): Editorial: D.J. Dries and J.F. Perry, Jr.: Interferon- γ : titration of inflammation. *Crit. Care Med.* (2002), 30, 1663-1664
- Phospholipases A₂ levels and distribution in bronchoalveolar lavage fluid of patients with Acute respiratory Distress Syndrome (ARDS): Application of a fluorimetric method: **Roche National Award 2002 / International Federation of Clinical Chemistry (IFCC)**

RESEARCH PROJECTS

1. PENED-91 «Biosynthesis and catabolism of platelet-activating factor (PAF). Investigation of its physiological role in the cells. (D Tsoukatos, ME Lekka).
2. KESY-93 «Investigation of the molecular basis for the development of infant respiratory distress syndrome ». (ME Lekka).
3. Bi-lateral cooperation programme between Greece and France «PLATON» 1997 «Study of immunochemical and biochemical parameters in adult respiratory distress syndrome». 1997, 1998. (ME Lekka, Lilly Maneta-Peyret).
4. Grant from the Research committee of the University of Ioannina 1999-2000 «Metabolism of platelet-activating factor (PAF): the de-phosphorylation step (ME Lekka)
5. STRIDE-Hellas No 33, (1991) «Cell injury and defense mechanisms: Molecular characterization». (O. Tsolas).

6. MAST-III PL 971620 EU “*Assessment of antifouling agents in coastal environments*” (TA Albanis)
7. SOCRATES 1999 University of Ioannina / Bordeaux-2 France (ME Lekka, L. Maneta-Peyret)
8. DAC-OECD, Greek Ministry of Environment 1999 «Development and application of integrated control of toxic and harmful chemical compounds in surface, underground and potable water (TA Albanis)
9. Contracts between the University of Ioannina and enterprizes 2001-2002 «*Study of bronchoalveolar lavage fluid in mechanically-ventilated patients*» (ME Lekka)
10. Grant from the Research committee of the University of Ioannina 2001-2002 «The systemic inflammatory response in coronary artery bypass grafting: what is the role of the very low ejection fraction» (ME Lekka, G Drossos)
11. SOCRATES 2002 University of Ioannina / Transylvania University of Brasov (ME Lekka, O. Falup-Pecurariu)
12. Bi-lateral cooperation programme between Greece and Slovenia 2001-2003 «*Photodegradation and biodegradation of selected pesticides and related xenobiotics in soil*», (TA Albanis)
13. Bi-lateral cooperation programme between Greece and France «PLATON» 2002-2004 «Phospholipases A2 in acute and chronic lung disorders». (ME Lekka, L. Touqui, Institut Pasteur, Paris, France)
14. PENED 2001 “Fluorimetric determination of phospholipases A2: Standardisation of the assay and applications (ME Lekka)
15. PENED 2001 “Development of methodology for the diagnosis, monitoring and protection from ventilatory-associated lung disorders” (ME Lekka)
16. HERAKLEITOS 2003 “Immunological mechanisms in the lung” (ME Lekka)
17. PYTHAGORAS 2005 “Mechanotransduction in lung cells” (ME Lekka)
18. PENED 2003 «The effect of mechanical ventilation and stretch in epithelium and endothelium of lung parenchyma: protective effect of PEEP in ventilatory-associated lung disorders” (G. Nakos)
19. COST Biomedicine and Molecular Biosciences (BMBS) BM1202 | European Network on Microvesicles and Exosomes in Health and Disease (ME-HAD) | 07 Dec 2012 - 06 Dec 2016 (L. O’Driscoll)

MEETINGS ORGANISED

- Local Scientific Meetings
- European Patent Office (EPO) seminar “Chemistry and Industrial Property – a successful liaison for innovation” Liaison Office, the Career Office and the EURAXESS Mobility Services Center of the University of Ioannina, Ioannina-Greece 6th April 2011

ADDITIONAL INFORMATION

- h-Index:17
- Total citation number: 771 (86 self-citations) ISI Web Science and Scopus
- 46 Original papers
- Participation to 60 international congresses
- Reviewer in 15 peer reviewed scientific journals
- Reviewer in International Research-Grant Agencies and Academies
- Has supervised 11 Doctoral Theses and 14 Masters