Curriculum Vitae			
LYMBERI Peggy (Pigi)	**POSITION TITLE:** RESEARCH DIRECTOR Department of Immunology Head of Immunology Laboratory Hellenic Pasteur Institute (HPI) Phone: +30 210 6478808, email: plymberi@pasteur.gr https://www.pasteur.gr/en/immunologylab/		
EDUCATION/TRAINING	**DEGREE**	**YEARS**	**FIELD OF STUDY**
Université "Pierre et Marie Curie" (Paris VI), Paris, France	BSc [*Maîtrise Ès Sciences]*	1977-1981	Biochemistry
Institut Pasteur de Paris (IPP), Paris, France	MSc *[Diplôme d'Etudes Approfondies : DEA]*	1981-1982	Advanced Immunology
Institut Pasteur de Paris, Paris, France	PhD1 *[Doctorat de 3e Cycle]*	1984	Immunology
Institut Pasteur de Paris, Paris, France	PhD2 *[Thèse de Doctorat]*	1988	Immunology
Institut Pasteur de Paris, Paris, France	Post-doc	1984-1985	Immunology
European Advanced Course in Immunopathology held in Paris (IPP)	Diplôme en Immunopathologie	1991	Immunopathology
FEBS Summer School in Immunology Ionian Village, Peloponnese, Greece		1989-1999	The Immune system: genes, receptors, regulation

A. Personal Statement

In 1988, I took over the organization of an autonomous Immunology Laboratory, of which I am still in charge. The Laboratory, conducting competitive research in the field of natural autoimmunity, is unique in Greece and focuses on natural antibodies (NAbs), both polyclonal and monoclonal, and more recently on cell-penetrating autoantibodies, as potential therapeutic tools. Studies on NAbs focus on the identification of their biological roles and their relation to pathological autoimmunity; led to a series of original papers and reviews (*Lymberi P, Barbouche R, Curr Opin Immunol 1990; Lymberi P et al., Autoimmunity 1990; Kourtis AP et al., Am J Hematol 1994; Haralambous S et al., Autoimmunity 1995; Zamanou A et al., J Autoimmun 2003; Lymberi P et al., Reference Module in Biomedical Sciences-Elsevier, 2021*). In between, 1993-2012, I initiated studies on thyroid autoimmunity, mainly by generating animal models of human diseases to explore the pathogenic mechanisms via autoreactive T-cells to specific thyroglobulin's epitopes (*Thrasyvoulides A et al., Eur J Endocrinol 2001*; *Karras E et al., Immunology 2003*; *Liakata E et al., Thyroid 2003; Karras E et al., J Autoimmun 2005; Hatzioannou A et al., Immunology 2007; Hatzioannou A et al., Immunology 2012; Kanistras I et al; Immunology 2014)*. In parallel, my strong immunochemistry background provided the basis for the development of high quality immunological products (reagents and immunoassays with a broad spectrum of applications, part of which has been successfully commercialised in the Greek market), and led to several applied research projects (NATO/Science for Stability programme, EU/FAIR, GSRT/EPET II, EPANEK) in collaboration with the private sector pharma (Farmalex, ELPEN), and food industry (National Food Centre of Dublin, Ireland and PINDOS Greek poultry industry) including the development of R&D units and technology transfer. To be mentioned that in 2017 I was nominated by the Greek Society of Clinical Chemistry-Clinical Biochemistry as a candidate member of the Committee for Harmonization of Autoimmune Tests (C-HAT) of the IFCC (International Federation of Clinical Chemistry and Laboratory Medicine). My current field of interest, is that of autoantibodies able to penetrate living cells (*Sali AD et al., Clin Transl Immunology 2015; Zannikou M et al., Immunology 2016*) which exhibit unique properties: in addition to serving as carriers, some of them exert intracellular activity, such as apoptosis induction. Other ways for the exploitation of NAbs with a wide range of applications and funding opportunities, are their use as biomarkers of meat quality in agri-food and in personalized medicine.

B. Positions

2006-present **Research Director (Grade A΄)**, Head of the Laboratory of Immunology, Department of Immunology, Hellenic Pasteur Institute, Athens, Greece

1990-2006 **Associate Researcher (Grade B΄)**, Head of the Laboratory of Immunology, Department of Biochemistry, Hellenic Pasteur Institute, Athens, Greece

1988-1990 **Assistant Researcher (Grade C΄)**, Head of the Laboratory of Immunology, Department of Biochemistry, Hellenic Pasteur Institute, Athens, Greece

1985-1988 **Assistant Researcher (Grade C΄)**, Group leader, Laboratory of Immunology, Hellenic Pasteur Institute, Athens, Greece

Prizes / Awards

Award of the Hellenic Society of Immunology (2019) for the best study presented in poster during the 11th Hellenic Congress in Immunology, entitled: *"Human monoclonal, cell-penetrating antibodies, derived from Multiple Myeloma patients' sera, inhibit cellular motility and induce apoptosis of metastatic breast cancer cells"*

Award of the Hellenic Society of Immunology (2010) for the best study presented orally during the 8th Hellenic Congress in Immunology, entitled: *"Experimental Autoimmune Thyroiditis: Study of the minimal T-cell epitopes of a pathogenic peptide of human thyroglobulin in genetically susceptible and resistant mouse strains"*

Award of the European Society for Reproductive Immunology (2009) for the best study presented orally during the 7th European Congress on Reproductive Immunology, entitled: *"Suppressive effect of an embryo-derived factor to pathogenic T-cells causing thyroid autoimmunity"*

General Secretary of Research and Technology, Evaluation of HPI research laboratories (2005): **Project of excellence** entitled: *"Autoantibodies able to penetrate living cells"*

Award of the Hellenic Society for Endocrinology, *S. Pitouli's Award* (1999) for the best research in the field of experimental Endocrinology; in the context of the 26th Panhellenic Congress of Endocrinology and Metabolism, entitled: *«An autoepitope in the homologous with acetylcholinesterase region of thyroglobulin, is correlated with Graves' disease and thyroid ophthalmopathy»*

French Embassy in Greece (1988-2000) Short-term fellowships (up to one month) for the visit of French laboratories in the context of scientific exchanges between the two countries. Collaborations with Researchers from the Institut Pasteur Paris: Laboratoire d'Immunocytochimie (Head Prof. Stratis Avrameas) and Laboratoire d' Immunohematologie et Immunopathologie (Head Prof. Guillaume Dighiero) and Saint-Antoine Hospital, Service d'Immunopathologie -Laboratoire Central d'Immunologie et d'Hematologie (Head Prof. Jean-Claude Homberg)

French Foundation for Medical Research Fellowship (1984-1985) for Post-doctoral Studies at the Institut Pasteur Paris, France.

Centre International des Etudiants et Stagiaires (French Government) (1981-1984) for Postgraduate Studies (DEA and Doctorat) Université "Pierre et Marie Curie" (Paris VI), Paris, France.

Collaborations in Greece and abroad

Professor Konstantinos Avgoustakis
Department of Pharmacy, University of Patras, Rio, Greece: nanotechnology-intracellular drug delivery and natural mCPAbs

Dr Antoine Blancher
Hôpital Purpan - Centre Hospitalier Universitaire (CHU), Toulouse, France: human mNAbs by hybridoma technology and monoclonal gammopathies

Dr Kostas Stamatopoulos
Institute of Applied Biosciences, CERTH, Thessaloniki, Greece: CLL and SMZL B-Cell Receptor (poly)reactivity

Professor Evangelos Terpos
Department of Clinical Therapeutics, University of Athens Medical School: monoclonal gammopathies

Professors Anastasios Germenis and Matthaios Speletas
University of Thessaly-Medical School: NAbs in Common Variable ImmunoDeficiency (CVID)

Professors Konstantinos Gourgoulianis and Sotirios Zarogiannis
University of Thessaly Medical School: NAbs in mesothelioma and other lung pathologies sera and pleural effusions

Professors Dimokritos Tsoukatos and Vassilis Tsikaris
University of Ioannina: free range pastured poultry biochemical indicators to certify Outdoor rearing Systems (P.I.N.D.O.S. EPANEK funded Project)

HPI researchers
Dr Andreas Mentis: COVID-19 sera**, Dr Avgi Mamalaki:** SARS-CoV-2 Ags**; Dr Haralabia Boleti:** confocal microscopy & live imaging**, Dr Maria Gaitanou:** Alzheimer's disease and NAbs**.**

Organization of national and international conferences/ advanced schools

Member of Congress Organizing or Scientific committees of the Greek Immunology Society: for National, Balcanic, or the European Immunology Congress organized in Greece (1998 - present)
Organizer of the Workshop «The autoantibodies in clinical practice», Sponsored by VARELAS company, held at HPI (2005)
Organizer of five advanced 10-day-courses in collaboration with the Institut Pasteur Paris, on "Immunodiagnostic techniques & applications in Immunopathology" and "Modern Methodology for the diagnosis of infectious & autoimmune diseases» (theory & practice) for Public Health physicians and biologists (1985-2001)
Co-organizer of the Greek - French meeting «New concepts in autoimmunity» held at HPI (1987)

Educational / Training Activities

- Training in Immunology and supervision of **>70 under- and post-graduate students** for the elaboration of graduate BSc, Master and PhD theses, respectively; **12 PhD theses, 4 MSc theses and 18 BSc theses** (1989-present)
- Member of the Special InterInstitutional Committee of the Interdepartmental Postgraduate Program of Studies (DPMS) "Animals: Ethics, Law, Welfare" organized jointly by the Department of Philosophy of EKPA and the HPI (founded in 2020).
- Teaching "natural autoimmunity" and providing laboratory training in pathological autoimmunity at postgraduate level in **MSc Programs**:
  1) *Clinical Biochemistry & Molecular Diagnosis* - University of Athens (1999-present)
  2) *Applications of Biology in Medicine* - University of Athens (1999-present)
  3) *Infectious Diseases-International Medicine*: *From Bench to Bedside* - Democritus University of Thrace (2021)
  4) *Clinical Applications of Molecular Medicine* - School of Medicine, University of Thessaly (2018)
- Regular participation in postgraduate seminars organized by the Ministry of Health, and Scientific Societies (1999-present)
- Training of the scientific and technical personnel of **Pharmaceutical Companies**: **FARMALEX** (Science for Stability program (SfS) /NATO 1988-1993: *Research and Development of Immunodiagnostic Methods*) and **ELPEN** (General Secretariat of Research and Technology (GSRT), Programme EPETII-EKBAN 1997-1999: *Development of infrastructure for the production of recombinant proteins and monoclonal antibodies for diagnosis and therapy*; -**Technology transfer and Development of R&D units** - (Subcontractor in both projects) (1989-1999)
- **Technology transfer in the National Food Centre of Dublin**, Ireland, in the context of EU FAIR programme (1997-1999): The prediction of meat quality at the early post-mortem period by detection of novel physical and chemical markers - (Subcontractor) 1999

Reviewing activities

- **Expert evaluator in reviewing panels** of the **European Commission** for the 5th Framework Program (2000), EU-Leonardo da Vinci projects (2004-2006 & 2009-2012), Erasmus+ Mobility and Partnerships projects (2014-present); -Expert evaluator of the **Romanian Executive Agency for Higher -Education, Research, Development and Innovation** Funding (2021)
- Expert evaluator of **competitive national research proposals** of the Greek General Secretariat for R&T (1998-up to date), National Council of Health-Ministry of Health, National Accreditation Center for Continuing Vocational Training (EKEPIS) (2007);
- **Member of the National Evaluators/Experts Registry** of the Ministry of Labour and Social Security in the fields "Health" and "Education and vocational training" (accession in 2002);
- **Peer-reviewer of scientific papers for international journals** (J. Immunol. Methods, BMC Infectious diseases, J. Autoimmunity, Immunology, Thyroid); Faculty Theses Evaluation Committee Member (National & Kapodistrian Athens Univ., Univ. of Ioannina) and Reviewer of foreign MSc theses (Memorial Univ. of Newfoundland, Faculty of Medicine, Canada.

Contribution to career development of young researchers

- **Markella Zannikou**, Ph.D (2006-2013); Post-Doc, Northwestern University (2016-present)

- **Aikaterini Hatzioannou**, BSc and Ph.D (2004-2011); Post-Doc, Technische Universität Dresden (2021-2023)
- **Evanthia Galanis**, MD Ph.D (1990-1992; has excelled in the U.S. Professor of Oncology, and Director of the Department of Molecular Medicine and Head of the Gene Therapy and Iotherapy Therapy Program at the Mayo Clinic Cancer Center, Rochester, Minnesota, U.S. and Adviser to the Food and Drug Administration of the United States (FDA) on therapeutic innovations https://www.mayo.edu/research/faculty/ galanis-evanthia-m-d/bio-00083446
- **Athena Kourtis**, MD Ph.D (1988-1990); has excelled in the U.S., Clinical Professor of Pediatrics. Centers for Disease Control and Prevention | CDC • Division of Reproductive Health, Emory University Dept of Pediatrics, Atlanta, U.S. https://www.linkedin.com/in/athena-kourtis-211322a5.

Dissemination of knowledge and experimental results

PUBMED list of publications at https://www.ncbi.nlm.nih.gov/myncbi/peggy.lymberi.1/bibliography/public/
51 publications in Web of Science, **1,866 citations**, h index 18. (Full list of publications, see APPENDIX)

- Publications in Greek journals (**2**),
- Proceedings (**9**),
- Chapters in International (**3**) and Greek (**4**) scientific books,
- Translated Editions (Dictionaries, Books, etc) (**5**).
- Abstracts in International (**60**) and Greek (**50**) Congresses/ Workshops.
- Invited speaker in Greek/foreign meetings, lectures and congresses (**>50**)

Dissemination of knowledge with Societal Impact (Recent activities)

- Alumni of Arsakeion High School. (2021-2022) A series of conferences on the SARS-CoV-2 pandemic, the virus molecular characteristics and the concept of mRNA vaccins.
- High School "Lycée Franco-Hellénique Eugène Delacroix", Athens, Greece (The French international school in Athens): Participation in Career Issues for "Jobs Forum" organized annually for 1st and 2nd year high school students – Presentations of the following professions: biologist, biochemist, chemist, pharmacist and open discussion with the students (14-02-2020, 15-02-2019, 23-02-2018)
- Invited for a speech by the Association "Friends of Hellenic Pasteur Institute":
  Topic: "Pathological autoimmunity and Autoimmune Diseases. Does Physiological autoimmunity also exist?" The audience: Members and friends of the Association of pensioners of Olympic airlines Company staff (SS EAPAE) (29-01-2020)
  Topic: "The *know thyself* of the immune system: its importance and applications in clinical practice". Theocharakis Foundation, Athens, Greece (April 2017)
- Participation in the "Researcher's Night" (2017): a pan-European event for the promotion of science, research and technology in the society, held at Technopolis City of Athens. Contributed by creating an interactive board game for elementary school students based on knowledge about vaccines and their importance. It was highly appreciated by the visitors of the HPI exhibition stand. This game is still presented and offered in every activity of our Institute targeted for the public. (e.g. TIF, see below)
- Participation in the 82nd to the 85th Thessaloniki's International Fair (TIF) 2018, 2019, 2020, and 2021, respectively
- Inaugural event in the context of the 100-year celebration of HPI – Organized and participated in a scientific event in honor of the internationally renowned immunology Professor, Stratis Avrameas, held at the HPI Auditorium (funded by the HPI and the Association "Friends of HPI") - under the auspices of the French Embassy in Athens (31-05-2019)

Publications 2015-2022

Vasileiou C, Kalantzi S, Vachlioti E, Athanassopoulos CM, Koutsakis C, Piperigkou Z, Karamanos N, Stivarou T, **Lymberi P**, Avgoustakis K, Papaioannou D. New analogues of polyamine toxins from spiders and wasps: Liquid phase fragment synthesis and evaluation of antiproliferative activity. *Molecules* 2022, 27(2), 447; https://doi.org/10.3390/molecules27020447

Lymberi P, Zannikou M, Hatzioannou A. Natural autoantibodies in health and disease. *Reference Module in Biomedical Sciences,* Elsevier, 2021. https://www.sciencedirect.com/science/article/pii/B9780128204726001973
(publication in Comprehensive Pharmacology edited by Terry Kenakin) Elsevier 2022. REVIEW (22 pages)

Sarrigeorgiou I, Kotsiou O, Rouka E, Perlepe G, Gourgoulianis K, Lymberi P, Zarogiannis S. Measurement of Natural antibodies (NAbs) against actin, DNA and trinitrophenol in the fluid of pleural effusion patients with various etiologies". *European Respiratory Journal* 2020, 56: 1137; DOI: 10.1183/13993003. congress-2020.1137. https://erj.ersjournals.com/content/56/suppl_64/1137

Ntoufa S, Gounari M, Papakonstantinou N, Binou D, Tyritidis I, Stivarou Th, Sarrigeorgiou I, Iatrou A, Stavroyianni N Anagnostopoulos A, Lymberi P, Stamatopoulos K. Detailed Functional Characterization of Splenic Marginal Zone Lymphoma: Uncovering Links between the Epigenetic and the Signaling Machinery. *Blood* 2019 134 (Supplement_1):1512. https://doi.org/10.1182/ blood-2019-127909

Gounari M, Iatrou A, Kotta K, Sarrigeorgiou I, Lymberi P, Chatzidimitriou A, Stamatopoulos K. Changes in N-Glycosylation Induced by Somatic Hypermutation Modulate the Antigen Reactivity of the Immunoglobulin Receptors in CLL Stereotyped Subset #201. *Blood* 2019 134 (Supplement_1): 1733. https://doi.org/10.1182/blood-2019-127852

Zannikou M, Bellou S, Eliades P, Hatzioannou A, Mantzaris M, Carayanniotis G, Avrameas S, **Lymberi P**. DNA-histone complexes as ligands amplify cell penetration and nuclear targeting of anti-DNA antibodies via energy-independent mechanisms. *Immunology* 2016; 147: 73-81, 2016; https://doi.org/10.1111/imm.12542

Sali AD, Karakasiliotis I, Evangelidou M, Avrameas S, **Lymberi P**. Immunological evidence and regulatory potential for cell-penetrating antibodies in intravenous immunoglobulin.. *Clin Transl Immunology* 2015; Volume: 4 Issue: 10 Pages: e42, 2015; https://onlinelibrary.wiley.com/doi/pdf/10.1038/cti.2015.18

Funding 2018-2022

Greek Programmes (National Strategic Reference Framework/NSRF)

2019-2021. National Strategic Reference Framework (NSRF), Human Resources Development, Education and Lifelong Learning, in the context of "Support to researchers with emphasis to young researchers-Round B'" Call, Proposal no: 1091, Research Field: Medical & Biological Sciences, Title:" Study of human, natural, monoclonal antibodies endowed with cell-penetrating ability as a model of targeted and combinatorial anti-cancer therapy". Project Coordinator: Dr P. LYMBERI/ Amount of grant: 45.546,00 €

2018-2020. Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK); sectoral operational programme of the Partnership and Cooperation Agreement (the new NSRF) for the period 2014-2020, approved on 18/12/2014 by the European Commission. MIS 5055808 (Proposal no: T2EΔK-01371, 18-2-2020), AREA I. R&D of Companies /PRIORITY AREA 5: Health and Medicines/AREA 5.7 Identification and confirmation of new therapeutic means, goals and biomarkers for the development of new methods/ PRIORITY 5.7.1 Individual analysis of human genomes and development of new methods. Titre: "Development and Commercialization of a microbiome-based prediction test for in vitro fertilization.". Acronym: Mi-IVF. Collaborating Private Companies: 1. AKESSO, 2. CEMIA S.A. **Subcontractors: 1.** Pharmacogenomics Laboratory, 4th Department of Internal Medicine, Medical School, National and Kapodistrian University of Athens. **2.** Immunology Laboratory, Dept of Immunology, Hellenic Pasteur Institute. Total grant: 541.077,00 € Lab subcontracting fee: 7.500,00 €

2018-2020. Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK); sectoral operational programme of the Partnership and Cooperation Agreement (the new NSRF) for the period 2014-2020, approved on 18/12/2014 by the European Commission. MIS 5030605 (Proposal no: T1EΔK-03939, 13-06-2017), Research field: AGRI-FOOD, Titre: Free range pastured Poultry biochemical indicators (Novel and Dynamic) to certify Outdoor rearing Systems". Acronym: P.I.N.D.O.S. Collaborating Institutions: 1. Biochemistry Laboratory, Dept of Chemistry, University of Ioannina, 2. Agricultural Poultry Association of Ioannina (APSI PINDOS) and 3. Immunology Laboratory, Dept of Immunology, Hellenic Pasteur Institute. Total budget: 999.486,26 €, Laboratory amount of grant: 190.000,00 €

2018-2020*. NSRF, IPIROS Perfecture, MIS 5033100, 28/11/2017, Field: AGRI-FOOD. Title: Development of a model unit of industrial poultry rearing/breeding/farming. (IPIROS) 1. University of Ioannina 2. Agricultural, Poultry Farm Cooperative of Ioannina "PINDOS" 3. "AGROZOI" Public Limited Company- Industrial and Commercial Company-Agricultural and Poultry Farming Businesses 4. Immunology Laboratory, Immunology

Department, Hellenic Pasteur Institute, Athens, Greece. Total budget: 466.000,00 €, Immunology Lab amount of grant: 24.800,00 €
** extended up to the end of 2022*

Institutional and collaborative projects
Institutional project entitled «Infectious, autoimmune and neurodegenerative diseases: study of the pathogenetic mechanisms and development of diagnostic, prognostic and therapeutic approaches» (MIS 5002486) implemented under the «Action Strategic Development on the Research and Technological Sector» funded by the Operational Program «Competitiveness, Entrepreneurship & Innovation» (**NSFR 2014-2020**), and co-financed by the Greek State & the European Regional Development Fund (550.000€), for the period Oct.2017–Oct.2019. **KRIPIS II action**-(***P.LYMBERI*** participant: Responsible for sub-project WP4.4: "Development of human monoclonal IgG autoantibodies able to penetrate living cells, for intracellular targeting of the nucleus or the cytoplasm"). Lab amount of grant: 22.487,17 €

Private Funding
2018-2019 Donation by I. Kabouris for cancer research: Project: "*Development of human monoclonal autoantibodies for targeting of cancer cells"* (***P.LYMBERI***: Project Coordinator). Total donation: 50.000,00€ Immunology Laboratory grant: 12.5000,00 €

Other
2021-2022. Hellenic Pasteur Institute (Decision of the Administration Council, Reference Number: 14365 / 28.12.2020) Project: Development of Serological immunoassays to get insight into the anti-SARS-CoV-2 immune response in Greece. In collaboration with the HPI Labs: Molecular Biology & Immunobiotechnology and Public Health-Diagnostics, and the Institut Pasteur Paris (provided us the respective plasmids for antigen expression at the HPI Biotechnology Unit). (***P.LYMBERI***: Project Coordinator) Total grant: 21.000,00 €, Immunology Lab amount of grant: 9.000,00 €

APPENDIX

FULL LIST OF PUBLICATIONS

MSc and 2 PhD THESES

1. **LYMBERI P**. Etude de protéines monoclonales humaines présentant des activités anticorps et examen idiotypique de deux d'entre-elles. DEA (equiv. Master of Science), Université Paris VI, Paris, 1982
2. **LYMBERI P**. Caractérisation et étude de l'idiotypie des autoanticorps naturels dans le modèle murin. Doctorat de 3e Cycle, Université Paris VI, Paris, 1984
3. **LYMBERI P**. Etudes sur la spécificité et l'idiotypie d'autoanticorps naturels chez la souris et le rat. Thèse de Doctorat, Université Paris VI, Paris, 1988

INTERNATIONAL JOURNALS

1. DIGHIERO G, GUILBERT B, FERMAND J P, **LYMBERI P**, DANON F, AVRAMEAS S. Thirty-six human monoclonal immunoglobulins with antibody activity against cytoskeleton proteins, thyroglobulin and native DNA: Immunological studies and clinical correlations. *Blood* 1983; 62: 264-270 http://www.ncbi.nlm.nih.gov/pubmed/6409187
2. DIGHIERO G, **LYMBERI P**, MAZIE JC, ROUYRE S, BUTLER-BROWNE GS, WHALEN RG, AVRAMEAS S. Murine hybridomas secreting natural monoclonal antibodies reacting with self antigens. *J Immunol* 1983; 131**:** 2267-2272 http://www.ncbi.nlm.nih.gov/pubmed/6631010
3. AVRAMEAS S, DIGHIERO G, **LYMBERI P**, GUILBERT B. Studies on natural antibodies and autoantibodies. *Annales d' Immunologie* 1983; D134 (1): 103-113
4. DIGHIERO G, **LYMBERI P**, GUILBERT B. Les autoanticorps naturels produits par des clones autoréactifs constituent une partie substantielle des immunoglobulines circulantes, et les protéines monoclonales correspondent fréquemment à l'expansion incontrolée de ces clones. [Natural antibodies produced by auto-reactive clones constitute a substantial part of circulating immunoglobulins, and monoclonal proteins correspond frequently to the uncontrolled expansion of these clones]. *Nouv Rev Franç Hematol* 1985; 27: 59-60
5. DIGHIERO G, **LYMBERI P**, HOLMBERG D, LUNDQUIST I, COUTINHO A, AVRAMEAS S. High frequency of natural autoantibodies in normal newborn mice. *J Immunol* 1985; 134: 765-771. http://www.ncbi.nlm.nih.gov/pubmed/4038410
6. **LYMBERI P**, DIGHIERO G, TERNYNCK T, AVRAMEAS S. A high incidence of cross-reactive idiotypes among murine natural autoantibodies. *Eur J Immunol* 1985; 15: 702-707 http://www.ncbi.nlm.nih.gov/pubmed/4007045
7. KARRAY S, **LYMBERI P**, AVRAMEAS S, COUTINHO A. Quantitative evidence against inactivation of self-reactive B-cell clones. *Scand J Immunol* 1986; 23: 475-480 https://pubmed.ncbi.nlm.nih.gov/3486461/
8. **LYMBERI P**, HIRSCH F, KUHN J, TERNYNCK T, DRUET P, AVRAMEAS S. Autoimmunity induced by $HgCl_2$ in Brown-Norway rats. II. Monoclonal antibodies sharing specificities and idiotypes with mouse natural monoclonal antibodies. *J Immunol* 1986; 136: 3277-3281 http://www.ncbi.nlm.nih.gov/pubmed/3514756
9. DIGHIERO G, **LYMBERI P**, GUILBERT B, TERNYNCK T, AVRAMEAS S. Natural autoantibodies constitute a substantial part of normal circulating immunoglobulins. *Ann NY Acad Sci* 1986; 475: 135-145 http://www.ncbi.nlm.nih.gov/pubmed/3466566
10. GUERY JC, DRUET E, GLOTZ D, HIRSCH F, KUHN J, **LYMBERY P**, DRUET P. Idiotypes of autoantibodies in mercury-induced autoimmunity in the rat. *Monogr Allergy* (Karger, Basel) 1987; 22: 99-108 https://pubmed.ncbi.nlm.nih.gov/3437905/
11. BLANCHER A, OKSMAN F, **LYMBERI P,** CALVAS P, CAMBONTHOMSEN A, CLANET M, DUCOS J. Human monoclonal autoantibodies produced by hybridomas derived from lymphocytes of multible-sclerosis patients. *Res Immunol* 1989; 140: 711-724 https://pubmed.ncbi.nlm.nih.gov/2595082/
12. **LYMBERI P**, BLANCHER A, CALVAS P, AVRAMEAS S. Natural autoantibodies in nude and normal outbred (SWISS) and inbred (BALB/c) mice. *J Autoimmun* 1989; 2: 283-295 http://www.ncbi.nlm.nih.gov/pubmed/2765099

13. BAXEVANIS C, RECLOS G, ARSENIS P, ANASTASOPOULOS E, KATSIYIANNIS A, **LYMBERI P**, MATIKAS N, PAPAMICHAIL M. Decreased expression of HLA-DR antigens on monocytes in patients with multiple sclerosis. *J Neuroimmunol* 1989; 22: 177-184
https://pubmed.ncbi.nlm.nih.gov/2649510/
14. **LYMBERI P**, BARBOUCHE R. Assays for autoantibodies. *Curr Opin Immunol* 1990; 2: 917-922
http://www.ncbi.nlm.nih.gov/pubmed/2486574
15. DIGHIERO G, **LYMBERI P**, MONOT C, ABUAF N. Sera with high levels of anti-smooth muscle and anti-mitochondrial antibodies frequently bind to cytoskeleton proteins. *Clin Exp Immunol* 1990; 82(1): 52-56
https://pubmed.ncbi.nlm.nih.gov/2208796/
16. ANAGNOSTIDES ST**,** ALETRAS AJ, **LYMBERI P,** TSIGANOS CP. Isolation and characterization of 2 glycoproteins from Hyaline Cartilage. *Eur J Biochem* 1990; 193: 905-912
https://febs.onlinelibrary.wiley.com/doi/pdfdirect/10.1111/j.1432-1033.1990.tb19416.x
17. TOFT AD, BLACKWELL CC, SAADI AT, WU P, **LYMBERI P**, SOUDJIDELLI M, WEIR DM. Secretor status and infection in patients with Graves' disease. *Autoimmunity* 1990; 7: 279-289
http://www.ncbi.nlm.nih.gov/pubmed/2102769
18. **LYMBERI P**, AESSOPOS A, KARAGEORGA M, HADZIYIANNI D, LOUKOPOULOS D, KAKLAMANIS PH. Increased IgA natural autoantibody activity in sera of patients with β-thalassemia. *Autoimmunity* 1990; 8: 81-82
https://pubmed.ncbi.nlm.nih.gov/2129787/
19. KOURTIS A, PANGALIS G, BORCHE L, BOUSSIOTOU V, DIGHIERO G, **LYMBERI P**. Monoclonal and/or oligoclonal immunoglobulins in sera of patients with non-Hodgkin's Lymphomas determined by isoelectric focusing. *Leuk Lymphoma* 1991; 5: 255-262
https://pubmed.ncbi.nlm.nih.gov/27467848/
20. KOURTIS AP, BOUSSIOTIS VA, **LYMBERI P,** PANGALIS GA. Increased natural antibody activity in sera of patients with malignant non-Hodgkin's lymphomas containing paraproteins. *Am J Hematol* 1994; 46: 283-288
https://pubmed.ncbi.nlm.nih.gov/8037178/
21. MAPPOURAS DG, PHILIPPOU G, HARALAMBOUS S, TZARTOS S, BALAFAS A, SOUVATZOGLOU A, **LYMBERI P**. Antibodies to acetylcholinesterase cross-reacting with thyroglobulin in myasthenia gravis and Graves' disease. *Clin Exp Jmmunol* 1995; 100: 336-343
http://www.ncbi.nlm.nih.gov/pubmed/7743674
22. HARALAMBOUS S, BLACKWELL C, MAPPOURAS DG, WEIR D, **LYMBERI P**. Increased natural autoantibody activity to cytoskeleton proteins in sera from patients with necrobiosis lipoidica, with or without insulin-dependent diabetes mellitus. *Autoimmunity* 1995; 20: 267-275
http://www.ncbi.nlm.nih.gov/pubmed/7578889
23. DAI Y, CARAYANNIOTIS K, ELIADES P, **LYMBERI P**, SEPHERD P, KONG Y-CM, CARAYANNIOTIS G. Enhancing or suppressive effects of antibodies on processing of a pathogenic T-cell epitope in thyroglobulin. *J Immunol* 1999; 162: 6987-6992
http://www.ncbi.nlm.nih.gov/pubmed/10358139
24. VOELTER W, STOEVA S, ECHNER H, BECK A, SCHUTZ J, LEHMANN R, HARING HU, SCHLEICHER E, MULLEN AM, CASSERLY U, TROY DJ, TSITSILONIS OE, **LYMBERI P,** BAXEVANIS CN, PAPAMICHAIL M. Analytical tools for rapid, sensitive, quantitative identification of potential meat quality markers. *J fur Praktische Chemie-Chemiker-Zeitung* 2000; 342: 179-191
25. THRASYVOULIDES A, SAKARELLOS-DAITSIOTIS M, PHILIPPOU G, SOUVATZOGLOU A, SAKARELLOS C, **LYMBERI P**. B-cell autoepitopes on the acetylcholinesterase-homologous region of human thyroglobulin: association with Graves'disease and thyroid eye disease. *Eur J Endocrinology* 2001; 145(2): 119-127
http://www.ncbi.nlm.nih.gov/pubmed/11454506
26. TSITSILONIS OE, STOEVA S, ECHNER H, MARGOMENOU L, BALAFAS A, TROY DJ, VOELTER W, PAPAMICHAIL M, **LYMBERI P**. A skeletal muscle troponin T ELISA based on the use of an antibody against the soluble troponin T (16-31) fragment. *J Immunol Methods* 2002; 268:141-148
https://pubmed.ncbi.nlm.nih.gov/12215382/
27. ZAMANOU A, TSIROGIANNI A, TERZOGLOU C, BALAFAS A, ECONOMIDOU I, **LYMBERI P**. Anti-smooth muscle antibodies (ASMA) and anti-cytoskeleton antibodies (ACTA) in liver diseases: A comparison of classical indirect immunofluorescence with ELISA. *J Clin Lab Analysis* 2002; 16(4):194-200
https://pubmed.ncbi.nlm.nih.gov/12112392/
28. KARRAS E, CARAYANNIOTIS G, **LYMBERI P**. Induction of murine thyroiditis by a non dominant E^k –restricted peptide of human thyroglobulin. *Immunology* 2003; 108: 556-561
http://www.ncbi.nlm.nih.gov/pubmed/12667218

29. THRASYVOULIDES A, **LYMBERI P**. Evidence for intramolecular B-cell epitope spreading during experimental immunization with an immunogenic thyroglobulin peptide. *Clin Exp Immunol* 2003; 132:401-407 http://www.ncbi.nlm.nih.gov/pubmed/12780685
30. ZAMANOU A, SAMIOTAKI M, PANAYOTOU G, MARGARITIS L, **LYMBERI P**. Fine specificity and subclass of IgG anti-actin autoantibodies differ in health and disease. *J Autoimmun* 2003; 20: 333-344 http://www.ncbi.nlm.nih.gov/pubmed/12791319
31. LIAKATA E, PHILIPPOU G, **LYMBERI P**, CARAYANNIOTIS G. Assessment of the frequency of mutant (hprt-) T lymphocytes from peripheral blood of patients with Hashimoto's thyroiditis. *Thyroid* 2003; 13: 631-636 http://www.ncbi.nlm.nih.gov/pubmed/12964967
32. TSITSILONIS OE, THRASYVOULIDES A, BALAFAS A, VOUTSAS JF, PAPAMICHAIL M, **LYMBERI P.** Serological detection of hepatitis B viral infection by a panel of solid-phase enzyme-linked immunosorbent assays (ELISA). *J Pharmaceut Biomed Anal* 2004; 34: 811-822 https://www.sciencedirect.com/science/article/abs/pii/S0731708503005636
33. BARRETT K, LIAKATA E, RAO PV, WATSON P, WEETMAN A, **LYMBERI P**, BANGA JP, CARAYANNIOTIS G. Induction of hyperthyroidism in mice by intradermal immunization with DNA encoding the thyrotropin receptor. C*lin Exp Immunol* 2004; 136: 413-422 http://www.ncbi.nlm.nih.gov/pubmed/15147342
34. THRASYVOULIDES A, **LYMBERI P**. Antibodies cross-reacting with thyroglobulin and thyroid peroxidase are induced by immunization of rabbits with an immunogenic thyroglobulin 20mer peptide. C*lin Exp Immunol* 2004; 138: 423-429 http://www.ncbi.nlm.nih.gov/pubmed/15544618
35. DAI Y, ELIADES P, CARAYANNIOTIS K, MCCORMICK DJ, KONG Y-CM, MAGAFFA V, CORDOPATIS P, **LYMBERI P**, CARAYANNIOTIS G. Thyroxine-binding antibodies inhibit T cell recognition of a pathogenic thyroglobulin epitope. *J Immunol* 2005; 174: 3105-3110 http://www.ncbi.nlm.nih.gov/pubmed/15728526
36. KARRAS E, YANG H, **LYMBERI P,** CHRISTADOSS P. Human thyroglobulin peptide p2340 induces autoimmune thyroiditis in HLA-DR3 transgenic mice. *J Autoimmun* 2005; 24: 291-296 http://www.ncbi.nlm.nih.gov/pubmed/15927791
37. THRASYVOULIDES A, LIAKATA E, **LYMBERI P.** Spreading of antibody reactivity to non-thyroid antigens during experimental immunization with human thyroglobulin. *Clin Exp Immunol* 2007; 147:120-127 http://www.ncbi.nlm.nih.gov/pubmed/17177971
38. HATZIOANNOU A, LIAKATA E, KARRAS E, THRASYVOULIDES A, ALEVIZAKI M, **LYMBERI P** Pathogenicity of a human thyroglobulin peptide (2340-2359) in mice with high or low genetic susceptibility to thyroiditis. *Immunology* 2007; 122: 343-349 http://www.ncbi.nlm.nih.gov/pubmed/17608692
39. LIVADITI O, GIAMARELLOS-BOURBOULIS EJ, KAKKAS I, KAPSIMALI V, **LYMBERI P**, PAPASTARIADES C, DOUZINAS EE. Grouping of patients with common variable immunodeficiency based on immunoglobulin biosynthesis: comparison with a classification system on CD4- naïve cells. *Immunol. Lett.* 2007;114:103-109 https://pubmed.ncbi.nlm.nih.gov/17977604/
40. AVRAMEAS S, TERNYNCK T, TSONIS IA, **LYMBERI P**. Naturally occurring B-cell autoreactivity: a critical overview. *J Autoimmun* 2007; 29:213-218 http://www.ncbi.nlm.nih.gov/pubmed/17888629
41. MATHIOUDAKI K, SCORILAS A, ARDAVANIS A, **LYMBERI P**, TSIAMBAS E, DEVETZI M, APOSTOLAKI A, TALIERI M. Clinical evaluation of PRMT1 gene expression in breast cancer. *Tumor Biology* 2011; 32: 575-582 https://pubmed.ncbi.nlm.nih.gov/21229402/ https://link.springer.com/article/10.1007/s13277-010-0153-2
42. HATZIOANNOU A, ALEVIZAKI M, CARAYANNIOTIS G**, LYMBERI P**. Fine epitope mapping within the pathogenic thyroglobulin peptide 2340-2359: minimal epitopes retaining antigenicity across various MHC haplotypes are not necessarily immunogenic *Immunology* 2012; 135: 245-253 http://www.ncbi.nlm.nih.gov/pubmed/22098450
43. KANISTRAS I, HATZIOANNOU A, **LYMBERI P**. A novel pathogenic peptide of thyroglobulin (2208-2227) induces autoreactive T-cell and B-cell responses in both high and low responder mouse strains *Immunology* 2014; 142(2):300-6 https://onlinelibrary.wiley.com/doi/10.1111/imm.12254
44. HATZIOANNOU A, KANISTRAS I, MANTZOU E, ANASTASIOU E, PEPPA M, SARANTOPOULOU V, **LYMBERI P**, ALEVIZAKI M**.** Effect of Advanced Glycation End Products on Human Thyroglobulin's Antigenicity as Identified by the Use of

Sera from Patients with Hashimoto's Thyroiditis and Gestational Diabetes Mellitus. *Int J Endocrinol* 2015; 2015:849615. doi: 10.1155/2015/849615. Epub 2015 Jul 2.142(2):300-306
https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC4503572/

45. SALI AD, KARAKASILIOTIS I, EVANGELIDOU M, AVRAMEAS S, **LYMBERI P.** Immunological evidence and regulatory potential for cell-penetrating antibodies in intravenous immunoglobulin. *Clin Transl Immunology* 2015; Volume:4 Issue:10 Pages: e42; doi: 10.1038/cti.2015.18
https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC4673440/

46. ZANNIKOU M, BELLOU S, ELIADES P, HATZIOANNOU A, MANTZARIS M, CARAYANNIOTIS G, AVRAMEAS S, **LYMBERI P.** DNA-histone complexes as ligands amplify cell penetration and nuclear targeting of anti-DNA antibodies via energy-independent mechanisms. *Immunology* 2016, 147: 73-81
https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC4693875/

47. **LYMBERI P**, ZANNIKOU M, HATZIOANNOU A. Natural autoantibodies in health and disease. *Reference Module in Biomedical Sciences*, Elsevier 2021,
https://www.sciencedirect.com/science/article/pii/B9780128204726001973

48. VASILEIOU C, KALANTZI S, VACHLIOTI E, ATHANASSOPOULOS CM, KOUTSAKIS C, PIPERIGKOU Z, KARAMANOS N, STIVAROU T, **LYMBERI P**, AVGOUSTAKIS K, PAPAIOANNOU D. New analogues of polyamine toxins from spiders and wasps: Liquid phase fragment synthesis and evaluation of antiproliferative activity. *Molecules* 2022, 27(2), 447
https://doi.org/10.3390/molecules27020447

PROCEEDINGS

1. GALANIS E, **LYMPERI P,** MANESIS E, ET AL. Specificity and title of M2-AMA in patients with chronic liver disease. *Hepatology* 1992; 16: A190-A190

2. DAI Y, CARAYANNIOTIS KA, ELIADES P, **LYMBERI P,** MCCORMICK DJ, KONG YM, CARAYANNIOTIS G. Blockade of T-cell recognition of a pathogenic thyroglobulin epitope by thyroxine-specific antibodies. *Faseb J* 2000; 14: A999-A999

3. PHILIPPOU G, SARANDOPOULOU V, ALEVIZAKI M, **LYMBERI P** ET AL. Type 1 diabetic pregnant women may develop postpartum thyroiditis independently of the presence of anti-thyroid antibodies. *Diabetologia* 2006; 49: 571-572

4. HATZIOANNOU A, BOBOU G, **LYMBERI P,** BARNEA E. Suppressive effect of an embryo-derived factor to pathogenic T-cells causing thyroid autoimmunity. *J Reprod Immunol* 2009; 81: 141-141

5. **LYMBERI P**, TERPOS E, HATZIOANNOU A, ET AL. High frequency of monoclonal immunoglobulins exhibiting natural autoantibody-like activity in patients with multiple myeloma and Waldenstrom macroglobulinemia. *Blood* 2011; 118: 1248-1249

6. VASILEIOU V, SARANDOPOULOU V, PHILIPPOU G, **LYMBERI P** ET AL. Does the presence of thyroid antibodies affect the course & outcome of pregnancy in type1 diabetic women? *Diabetologia* 2012; 55: S436-7

7. NTOUFA S, GOUNARI M, PAPAKONSTANTINOU N, BINOU D, TYRITIDIS I, STIVAROU Th, SARRIGEORGIOU I, IATROU A, STAVROYIANNI N, ANAGNOSTOPOULOS A, **LYMBERI P**, STAMATOPOULOS K. Detailed Functional Characterization of Splenic Marginal Zone Lymphoma: Uncovering Links between the Epigenetic and the Signaling Machinery. *Blood* 2019 134 (Supplement_1):1512. https://doi.org/10.1182/ blood-2019-127909

8. GOUNARI M, IATROU A, KOTTA K, SARRIGEORGIOU I, **LYMBERI P**, CHATZIDIMITRIOU A, STAMATOPOULOS K. Changes in N-Glycosylation Induced by Somatic Hypermutation Modulate the Antigen Reactivity of the Immunoglobulin Receptors in CLL Stereotyped Subset #201. *Blood* 2019 134 (Supplement_1): 1733. https://doi.org/10.1182/blood-2019-127852

9. SARRIGEORGIOU I, KOTSIOU O, ROUKA E, PERLEPE G, GOURGOULIANIS K, **LYMBERI P**, ZAROGIANNIS S. Measurement of Natural antibodies (NAbs) against actin, DNA and trinitrophenol in the fluid of pleural effusion patients with various etiologies". *European Respiratory Journal* 2020 56: 1137; DOI: 10.1183/13993003. congress-2020.1137. https://erj.ersjournals.com/content/56/suppl_64/1137

PUBLICATIONS IN GREEK SCIENTIFIC JOURNALS

1. **LYMBERI P**, PHILIPPOU G. Thyroid autoimmnity: autoantigens, autoantibodies, autoreactive T lymphocytes, pathogenicity. *Archives of Hellenic Medicine* 1999, 16: 337-351.

2. AVRAMEAS S, **LYMBERI P**. The immune system from the perspective of natural autoimmunity. *Immunity (Edition of the Hellenic Society of Immunology)* 2014, 10, 2: 99-103.

EDITORIAL ACTIVITIES – BOOKS AND OTHER EDITIONS

1. AMITAL-TEPLIZKI H, **LYMBERI P**, TOMER Y, SHOENFELD Y. The idiotypic network, autoimmunity, and natural autoantibodies. In: Shoenfeld Y and Isenberg DA (eds) *Natural autoantibodies: their physiological role and regulatory significance*, CRC Press, 1993; ch. 10, pp. 175-204.
2. THRASYVOULIDES A, **LYMBERI P**. A human thyroglobulin peptide able to drive intramolecular B cell epitope spreading when administered in rabbits. In: Sadia Rashid (ed) Essays on Science. Felicitation Volume in honour of Prof. Wolfgang Voelter, Hamdard Foundation Pakistan, 2006, Volume 8, pp.1-17.
3. **LYMBERI P**, PHILIPPOU G, LIAKATA E, HATZIOANNOU A, SOUVATZOGLOU A. Thyroglobulin and thyroid peroxidase as autoantigens. Felicitation Volume in honour of Prof. Dimitrios Koutras, Parissianos Scientific Eds, Athens 2006, ch.15: 101-108.
4. GERMENIS AE, **LYMBERI P**. "Autoimmunity", "Laboratory Immunological Methodology", and "English Greek dictionary of immunological terms". In: Germenis AE. Medical Immunology, Papazissis Editions, Athens 2000, ch. 14: 237-262, ch. 20: σ. 383-412, and appendix D: pp 469-480, respectively.
5. **LYMBERI P**, PHILIPPOU G. Antibodies to thyroid gland. In: Intensive Education in Endocrinology - 7th cycle: Thyroid gland. Edition of the Hellenic Endocrinological Society, Athens 2004, pp. 131-144.
6. **LYMBERI P**. Introduction in Immunochemistry and Immunochemical methods: principles and applications in Immunopathology. The Institute for Language and Speech Processing, General Secretariat for Research and Technology (GSRT) – Ministry of Development, 1997.
7. **LYMBERI P**. Dictionary of scientific terms in Immunochemistry and Immunochemical methods - 2000 entries (Greek-English and English-Greek). The Institute for Language and Speech Processing, GSRT – Ministry of Development, 1997.

TRANSLATIONS OF SCIENTIFIC EDITIONS

« Techniques immunoenzymatiques » by T. Ternynck and S. Avrameas. **LYMBERI P.**: Translation from French to Greek. Edition of the Hellenic Pasteur Institute, 1989.