

Anna Charalambous, Ph.D.

Department of Biological Sciences, University of Cyprus

Personal Details

Name: Anna Charalambous
Date of Birth: 11/11/1978
E-mail: annita@ucy.ac.cy
Telephone: 22-893971

Education

2006-2008 Post-Doctorate. The Rockefeller University in the laboratory of Dr. Ralph Steinman (Nobel laureate 2011)
2001-2006 Ph.D. The Rockefeller University, Laboratory of Dr. Ralph Steinman
1997-2001 Bachelor of Science. Molecular Biochemistry and Biophysics, Yale University.
Cum Laude and Highest Honors

Work Experience

2010-present **Teaching Staff, University of Cyprus.** Taught Biochemistry I and II (BIO221 & BIO222) to undergraduate sophomores. Assisted in setting up and taught the only undergraduate laboratory course of the Biology program: Laboratory Methods & Techniques (BIO241 & BIO242). Taught the graduate course "Scientific Methodology in Molecular Biology" which is equivalent to the Theoretical Master's Thesis (BIO680)

2008-2010 **Visiting Assistant Professor, University of Cyprus.** Taught Biochemistry to undergraduate sophomores. Assisted in setting up and taught the undergraduate laboratory course of the Biology program: Laboratory Methods & Techniques

2006-2008 **Post-Doctorate research, The Rockefeller University in the laboratory of Dr. Ralph Steinman**
Investigated the role of CD70 expressed on dendritic cells in priming Th1 vs. Th2 responses and generated CD70 conditional knockout mice

2002-2006 **Ph.D. research, The Rockefeller University in the laboratory of Dr. Ralph Steinman**
Focused on improving anti-tumor immunity by antibody-targeted delivery of tumor antigens to maturing dendritic cells in mice. Gained expertise on molecular cloning techniques, tissue culture, immunohistochemistry and other immunological based assays, protein isolation and characterization, antibody production, Flow Cytometry, Fluorescence Microscopy etc.

- 2001-2002** **Research performed as a rotation student at the Laboratory of Dr. Maria Karayiorgou, The Rockefeller University.** Evaluated and confirmed an association between the brain-derived neurotrophic factor (BDNF) gene and susceptibility to obsessive-compulsive disorder (OCD)
- Summer2000** **Summer Internship at the Laboratory of Dr. Eric Kandel (Nobel Laureate 2000), Columbia University.** Worked on the physiological basis of memory storage in neurons
- 1999-2000** **Research Assistant at the Laboratory of Dr. Anthony Koleske, Yale University.** Worked on the role of Abl and Arg tyrosine kinases in cell migration, tumor invasion and neurodegeneration
- 1999-2001** **Research Assistant at Dr. Lyssiotis, Haematologist, Nicosia, Cyprus**
- Observed excision of human tumors for biopsies
 - Trained in histopathological examination- formaldehyde fixation of samples, embedding in paraffin wax and thin sectioning, as well as, staining techniques (hematoxylin/eosin)
 - Trained in examining tissue sections for malignancy

Teaching Experience

- 2010-present** **Teaching Staff, University of Cyprus.** Taught Biochemistry to undergraduate sophomores. Assisted in setting up and taught the only undergraduate laboratory course of the Biology program: Laboratory Methods & Techniques. Taught the graduate course “Scientific Methodology in Molecular Biology” which is equivalent to the Theoretical Master’s Thesis
- 2008-2010** **Visiting Assistant Professor, University of Cyprus.** Taught Biochemistry to undergraduate sophomores. Assisted in setting up and taught the only undergraduate laboratory course of the Biology program: Laboratory Methods & Techniques
- 2006-2008** **Guest lecturer for Introductory Immunology and Dendritic Cell Biology Courses at The Rockefeller University**
- 2004-2008** **Trained several research assistants at The Rockefeller University,** two of whom were under my direct supervision during the last two years of my PhD and during my post-doc. Demonstrated experimental techniques, provided detailed protocols and discussed the theory behind experiments
- 1998-1999** **Mentor for Organic Chemistry Course, Yale University**

Current Research Activities (2012-2017):

1. Collaborating with Dr. Paris Skourides, on several Research Projects. Older projects included RPF funded Research Project “Novel nanomaterials and methodologies for diagnostic and biotechnological applications” and RPF funded Research and Infrastructure Project “Development of a new methodology for in vivo, inducible and site-specific conjugation of Quantum Dots to proteins and functional applications”

2. Conducted mouse in vivo experiments, in collaboration with Dr. Panos Papageorgis for the Project: "Identification and functional characterization of novel genes involved in breast cancer metastasis"
3. Conducted mouse in vivo experiments, to assist Dr. Christiana Neophytou, in the lab of Dr. Constantinou, for the Project: "The role of TPGS in breast cancer"

Achievements and Awards

- 2013** Research Promotion Foundation Grant "Novel nanomaterials and methodologies for diagnostic and biotechnological applications" ΤΕΧΝΟΛΟΓΙΑ/ΥΛΙΚΑ/0311(BIE)/10
- 2009** Research Promotion Foundation Grant (Collaborator in Research Infrastructure Project: "Development of a new methodology for in vivo, inducible and site-specific conjugation of Quantum Dots to proteins and functional applications")
- 2008** Research Promotion Foundation Grant (Strategic Infrastructure Project: "The Center for the Study of Hematological Malignancies")
- 2001 -2006** Graduate Fellowship by The Rockefeller University
- 2004 -2006** Fellowship supported by the Cancer Research Institute's Training Grant: "Emphasis on Pathways in Tumor Immunology", led by Dr. Michel Nussenzweig
- 2001-present** Member of the New York Academy of Sciences
- 2001** Graduated *Cum Laude* from Yale University and with Distinction in the Major (Molecular Biochemistry & Biophysics)
- 1997 -2001** CASP (Cyprus American Scholarship Program) – Evie Sofianou Full Expense Undergraduate Scholarship awarded by the Fulbright Commission (single scholarship awarded annually)
- 1997** Ambassador of Cyprus to the European Youth Parliament, funded by the European Union and hosted in Nicosia, Cyprus
- 1991 -1997** Merit-Based Full Scholarship from The Grammar School, Nicosia, Cyprus

Reviewer Duties

- 2006-present** Journal "*Immunology Letters*"
- 2011-present** Journal "PLOS Computational Biology"

Publications:

1. **Charalambous A**, Koyioni M, Antoniadou I, Pegeioti D, Eleftheriou I, Michaelidou S, Amelichev A, Konstantinova L, Rakitin O, Koutentis P* and Skourides P.* “1,2,3-Dithiazoles-new reversible melanin synthesis inhibitors: a chemical genomics study”, *Med. Chem. Commun.*, 2015,**6**, 935-946
2. Ioannou, A., Eleftheriou, I., Lubatti, A., **Charalambous, A.**, Skourides, P.A. “High-resolution whole-mount in situ hybridization using quantum dot nanocrystals” (2012) *Journal of Biomedicine and Biotechnology* 2012
3. **Charalambous A***, Antoniadou, I*., Christodoulou, N. and Skourides P. “Split-Inteins for Simultaneous, site-specific conjugation of Quantum Dots to multiple protein targets *In vivo*” *Journal of Nanobiotechnology* 2011, **9**: 37 (15 September 2011)
4. **Charalambous A**, Andreou M. and Skourides P. “Intein-mediated site-specific conjugation of Quantum Dots to proteins *in vivo*” *Journal of Nanobiotechnology* 2009, **7**: 9 (10 December 2009)
5. Wang, B., Kuroiwa, J., He, L., **Charalambous, A.**, Keler, T., Steinman, RM. The human cancer antigen mesothelin is more efficiently presented to the mouse immune system when targeted to the DEC205 receptor on Dendritic Cells. *Annals of the NYAS*, 2009, Volume 1174 Issue Cancer Vaccines Sixth International Symposium, Pages 6-17
6. **Charalambous A.**, Oks M., Nchinda G., Yamazaki S., Steinman RM. Dendritic Cell targeting of survivin protein in a xenogeneic form elicits CD4⁺ T cell immunity to mouse survivin. *J Immunol.* 2006 Dec 15;177(12):8410-21.
7. Radek S.*, **Charalambous A.***, Mazumder A., Vesole D., Jagannath S. Dhodapkar M. Bortezomib enhances dendritic cell (DC) mediated induction of immunity to human myeloma via exposure of cell surface heat shock protein 90 on dying tumor cells: Therapeutic implications. *Blood. E-pub* 2007 Feb 13. *Equal Contribution
8. Liu K., Idoyaga J., **Charalambous A.**, Fujii S., Bonito A., Oks M., Mordoh J., Wainstok R., Bai XF., Liu Y., Steinman RM. Innate NKT Lymphocytes Confer Superior Adaptive Immunity Via Tumor Capturing Dendritic Cells. *J Exp Med.* 2006 202(11):1507-116.
9. Bonifaz LC, Bonnyay DP, **Charalambous A**, Darguste DI, Fujii S, Soares H, Brimnes MK, Moltedo B, Moran TM, Steinman RM. In Vivo Targeting of Antigens to Maturing Dendritic Cells via the DEC-205 Receptor Improves T Cell Vaccination. *J Exp Med.* 2004 Mar 15;199(6):815-24.
10. Kang YS, Kim JY, Bruening SA, Pack M, **Charalambous A**, Pritsker A, Moran TM, Loeffler JM, Steinman RM, Park CG. The C-type lectin SIGN-R1 mediates uptake of the capsular polysaccharide of *Streptococcus pneumoniae* in the marginal zone of mouse spleen. *Proc Natl Acad Sci U S A.* 2004; 101(1):215-20. Epub 2003 Dec 23.
11. Hall D, Dhilla A, **Charalambous A**, Gogos JA, Karayiorgou M. Sequence variants of the brain-derived neurotrophic factor (BDNF) gene are strongly

associated with obsessive-compulsive disorder. *Am J Hum Genet.* 2003 Aug;73(2):370-6. Epub 2003 Jun 27.

Total Number of citations: 1304

Author h-index (by Scopus): 8

Book Contributions

1. **Charalambous A.***, Antoniadou I.*, Christodoulou N., Zanardelli S., and Skourides, P. "Determining the expression and role of Calpains in Amphibians". Submitted to *Methods in Molecular Biology* in June 2017
2. Ioannou, A., Eleftheriou, I., **Charalambous, A.**, Skourides, P.A. "Single and multiplexed fluorescent in situ hybridization using quantum dots nanocrystals in Xenopus" *In Situ Hybridization Methods*, Part of the *Neuromethods Book Series, NM Volume 99, pp451-462, 2015*
3. **Charalambous, A.**, Andreou, M., Antoniadou, I., Christodoulou, N., Skourides, P.A. In vivo, site-specific, covalent conjugation of quantum dots to proteins via split-intein splicing (2012) *Methods in Molecular Biology* 906 PP. 157 - 169
2. Liu K., **Charalambous A.**, Steinman R. Some biological features of dendritic cells in mouse. In *The Mouse in Biomedical Research, Volume 3: Normative Biology, Immunology and Husbandry, 2nd Ed, Elsevier, San Diego, eds JG Fox, C Newcomer, A Smith, S. Barthold, F Quimby, and M Davisson. 2006.*

Oral and Poster Presentations

1. Poster presentation at the Nanotheragnostics International Conference, Ayia Napa, Cyprus, 2010
2. Thesis Defense Presentation at The Rockefeller University, New York, NY, April 12th, 2006: "Improved Immunity to tumor antigens following their delivery to maturing dendritic cells in mice".
3. Oral presentation at Chris Browne lecture series at The Rockefeller University, New York, NY, June 6th, 2005: "Identifying tumor regression antigens via α DEC205-mediated targeting to dendritic cells".
4. Poster presentation at the 7th International Symposium on Dendritic Cells, Bamberg, Germany, September 2002: "Systemic distribution and prolonged presentation of OVA after α DEC205 targeting to dendritic cells" by **Charalambous A.**, Flores A., Bonifaz L., Steinman R.M.
5. Poster presentation at the 8th International Symposium on Dendritic Cells, Brugge, Belgium, October 17-21, 2004: "HIV-P24 GAG targeted to dendritic cells via DEC205 induces antigen specific CD4 and CD8 responses *in vivo*" by Trumpfheller C., **Charalambous A.**, Darguste D., Bonifaz L., Granelli-Piperno A., Steinman R.M.
6. Poster presentation at The Rockefeller University, New York, NY, March 20th, 2005: "Innate NKT Lymphocytes Confer Superior Adaptive Immunity Via

Tumor Capturing Dendritic Cells” by Liu K., Idoyaga J., **Charalambous A.**, Fujii S., Bonito A., Oks M., Mordoh J., Wainstok R., Bai XF., Liu Y., Steinman RM.

7. Attended the Keystone Symposium on Dendritic Cell Function, Denver, Colorado, Feb 25 -Mar 02 2007