

CURRICULUM VITAE- ALEXIS M. KALERGIS

Born September 3rd, 1970.
Nationality: Chilean
Address: Laboratory of Molecular Immunology. Departamento de Genética Molecular y Microbiología. Facultad de Ciencias Biológicas. Pontificia Universidad Católica de Chile. Alameda 340, Casilla 114-D, Santiago de Chile. Phone: 562-686-2842; Fax: 562-222-5515. email: kalergis@bio.puc.cl

Present Positions: Assistant Professor, Facultad de Ciencias Biológicas. Pontificia Universidad Católica de Chile. *Associated Investigator, Facultad de Medicina, Pontificia Universidad Católica de Chile. Visiting Professor, Albert Einstein College of Medicine.

Education and training:

1988-1995: Biochemistry, Pontificia Universidad Católica de Chile
1995-1997: Master in Science at The Albert Einstein College of Medicine
1997-2000: Ph.D. at The Albert Einstein College of Medicine
2000-2001: Post-doctoral fellow at The Albert Einstein College of Medicine
2001-2002: Post-doctoral fellow at The Rockefeller University

Accademic positions:

2000-2001: Post-doctoral fellow at The Albert Einstein College of Medicine
2000-2002: Adjunt Faculty for Immunology, Yeshiva College, New York
2001-2003: Post-doctoral fellow, The Rockefeller University
2002-2004: Lecturer of Immunology and Microbiology, Pontificia Universidad Católica de Chile.
2002- present: Assistant Professor, Facultad de Ciencias Biológicas. Pontificia Universidad Católica de Chile.
*2004-present: Visiting Professor, Albert Einstein College of Medicine.
*2005-present: Associated Investigator, Facultad de Medicina, Pontificia Universidad Católica de Chile.

Honors, Awards and Grants:

Selected as one of the 50 Chilean Leaders of 2005
*FONDECYT research grant, 2005 (Co-investigator, PI: Dr. S. Jacobelli,)
*Millenium Nucleus on Immunology and Immunotherapy, 2005
Most distinguished young investigator award, BiosChile Soc.Biol.Chile, 2004
IFS, research grant 2004
Appointed associated investigator to the Center for Cell Regulation and Pathology, FONDAP-Biomedicine, 2003
FONDECYT research grant, 2002 (Principal Investigator)
DIPUC research grant, 2002
Helen Hay Whitney Postdoctoral Fellowship, 2001
Irvington Institute for Immunology Postdoctoral Fellowship, 2001
Julius Marmur Award to the best Ph.D. thesis at the Albert Einstein College of Medicine, 2000.
Honors at the qualify exam, Albert Einstein College of Medicine, 1997.

Bibliography.

1. SM Bueno, MI Iruretagoyena, JA Tobar, AM Kalergis Molecular Interactions Between Dendritic Cells and Salmonella: Escape From Adaptive Immunity and Implications on Pathogenesis. (*Critical Reviews in Immunology*, 2005, in press).
2. MI Iruretagoyena, M Wiesendanger and AM Kalergis. The Dendritic cell-T cell synapse as a determinant of autoimmune pathogenesis. (*Current Pharmaceutical Design*; 2005, in press)
3. PA González, LJ Carreño, D. Coombs, JE Mora, E. Palmieri, B Goldstein, SG Nathenson and AM Kalergis. TCR binding kinetics required for T cell activation depend on the density of cognate ligand on the APC. *Proc Natl Acad Sci U S A.*, 2005 vol. 102 no. 13: 4824-4829
4. MI Iruretagoyena, JA. Tobar, PA. González, SE. Sepúlveda, CA. Figueroa, RA. Burgos, JL. Hancke and AM. Kalergis. Andrographolide interferes with T cell activation and reduces Experimental Autoimmune Encephalomyelitis in the Mouse. (*Journal of Pharmacology and Experimental Therapeutics*, 2005, 312(1):366-72).
5. Corvalán J, Araya R, Kalergis A.M. and Sáez JC. Specific Mixtures of Cytokines Control the Expression of Functional Gap Junctions in a Dendritic Cell Line. (Submitted, 2004).
6. JA. Tobar, PA. González and A.M. Kalergis. Salmonella escape from antigen presentation can be overcome by targeting bacteria to Fc γ Receptors on dendritic cells. (*Journal of Immunology*, 2004, 173: 4058-4065).
7. A.M. Kalergis, A. Fierro, C. Figueroa, P. González y J. Tobar. Antigen-specific detection of T lymphocytes and its clinical applications. (*Revista Médica de Chile*, 2004, 132:371-380).
8. A.M. Kalergis. Modulation of T cell antigen recognition by activating/inhibitory receptor pairs on the antigen-presenting cell. *Current Pharmaceutical Design*; 2003, 9(3):233-44.
9. A.M. Kalergis and Jeffrey V. Ravetch. Inducing tumor immunity through the selective engagement of activating Fc γ receptors on dendritic cells. *The Journal of Experimental Medicine*, 2002 Jun 17;195(12):1653-9.)
10. D. Coombs, A. M. Kalergis, S.G. Nathenson, C. Wofsy and B. Goldstein. Activated TCR remain marked for internalization after dissociation from peptide-MHC. *Nature Immunology*, 2002, 3(10):926-31.
11. S. Honda, W. Zhang, A. M. Kalergis, T.P. DiLorenzo, F. Wang, and S.G. Nathenson. Hapten addition to an MHC class I-binding peptide causes substantial adjustments of the TCR structure of the responding CD8⁺ T cells. *Journal of Immunology*, 2001 167: 4276-4285.
12. W. Zhang, S. Honda, F. Wang, T.P. DiLorenzo, A. M. Kalergis, D.A. Ostrov, and S.G. Nathenson. Immunobiological analysis of TCR single-chain transgenic mice reveals new possibilities for interaction between CDR3 α and an antigenic peptide bound to MHC class I. *The Journal of Immunology*, 2001 167: 4396-4404.
13. A.M. Kalergis, N. Boucheron, M.A. Doucey, E. Palmieri, E.C. Goyarts, Z. Vegh, I.F. Luescher and S.G. Nathenson. Efficient T cell activation requires an optimal dwell time of interaction between the TCR and the pMHC complex *Nature Immunology*. 2001; 2(3):229-34.
14. C.T. Thomson, A. M. Kalergis, J.C. Sacchettini and S.G. Nathenson. Minor structural changes limited to the antigenic peptide can profoundly alter the outcome of the TCR/MHC-peptide interaction. *The Journal of Immunology*. 2001; 166(6):3994-7.

15. B. Reddy, S. Gupta, Y. Chuzhin, A.M. Kalergis, L. Budhai, M. Zhang, G. Droguett, M.S. Horwitz, J. Roy Chowdhury, S.G. Nathenson and A. Davidson. Differential effect of CD28/B7 blockade with CTLA4Ig on alloreactive CD4⁺, CD8⁺ and B cells in murine isolated hepatocyte transplantation. *Transplantation*. 2001; 71(6):801-11
16. Kalergis, A.M. and Nathenson, S.G. Antigen recognition by $\alpha\beta$ T cells. *Einstein Quarterly Journal of Biology and Medicine*. 2000, 17 (2):56-68.
17. Kalergis, A.M. and Nathenson, S.G. Altered peptide ligand-mediated TCR antagonism can be modulated by a change in a single amino acid residue within the CDR3 β of an MHC I-restricted TCR. *The Journal of Immunology*. 2000;165(1):280-5.
18. Kalergis, A.M., Goyarts, E.C., Palmieri, E., Honda, S., Zhang, W. and Nathenson, S.G. A simplified procedure for the preparation of MHC/peptide tetramers: chemical biotinylation of an unpaired cysteine engineered at the C-terminus of MHC-I. *Journal of Immunological Methods*. 2000; 234(1-2):61-70.
19. Kalergis, A.M., Ono, T., Wang, F., DiLorenzo, T.P., Honda, S. and Nathenson, S.G. Single amino acid replacements in an antigenic peptide are sufficient to alter the TCR V β repertoire of the responding CD8⁺ cytotoxic lymphocyte population. *The Journal of Immunology*. 1999, 162 (12):7263-70.
20. *Goyarts, E.C., *Vegh, Z., *Kalergis, A.M., Horig, H., Papadopoulos, N.J., Young, A.C., Thomson, C.T., Chang, H.C., Joyce, S. and Nathenson, S.G. Point mutations in the beta chain CDR3 can alter the T cell receptor recognition pattern on an MHC class I/peptide complex over a broad interface area. *Molecular Immunology*. 1998; 35 (10):593-607. *Equal contribution.
21. Ono, T., DiLorenzo, T.P., Wang, F., Kalergis, A.M. and Nathenson, S.G. Alterations in TCR-MHC contacts subsequent to cross-recognition of class I MHC and singly substituted peptide variants. *The Journal of Immunology*. 1998; 161 (10):5454-63.
22. Wang, F., Ono, T., Kalergis, A.M., Zhang, W., DiLorenzo, T.P., Lim, K. and Nathenson, S.G. On defining the rules for interactions between the T cell receptor and its ligand: a critical role for a specific amino acid residue of the T cell receptor beta chain. *Proc. Natl. Acad. Sci. U.S.A.* 1998; 95 (9):5217-22.
23. Lopez, C.B., Kalergis, A.M., Becker, M.I., Garbarino, J.A. and Deloannes A.E. CD8⁺ T cells are the effectors of the contact dermatitis induced by urushiol in mice and are regulated by CD4⁺ T cells. *Int. Arch. Allergy Immunol.* 1998; 117(3):194-201.
24. Kalergis, A.M., Lopez, C.B., Becker, M.I., Diaz, M.I., Sein, J., Garbarino, J.A. and Deloannes, A.E. Modulation of fatty acid oxidation alters contact hypersensitivity to urushiols: Role of aliphatic chain beta-oxidation in processing and activation of urushiols. *Journal of Investigative Dermatology*. 1997; 108(1):57-61.

Invited Lectures.

- 1998, School of Biological Sciences, P. Catholic University of Chile
- 1999, Basel Institute of Immunology, Switzerland
- 1999, Ludwig Institute for Cancer Research, Lausanne Switzerland
- 2000, School of Biological Sciences, P. Catholic University of Chile
- 2000, School of Chemistry and Pharmacy, University of Chile
- 2000, Biosonda, S.A., Chile
- 2000. The Rockefeller University, NY
- 2000, Karolinska Institutet, Stockholm
- 2000, Okayama University, Japan
- 2001, Los Alamos National Laboratory, New Mexico
- 2001, Biosonda, S.A., Chile
- 2002. Transplantation Society Meeting, Miami,

2002. Instituto de Ciencias Biomédicas, Chile
2002. Albert Einsein College of Medicine, NY
2002. Facultad de Ciencias, Universidad de Chile
2003, Universidad de Los Andes, Chile.
2003, Universidad del Desarrollo, Chile
2003, Irene Diamond Symposia, NY
2003, Department of Physiology, Pontificia Universidad Católica de Chile
2003, Department of Molecular Genetics and Microbiology, Pontificia Universidad Católica de Chile
2003, Deparmtent of Reumathology, Pontificia Universidad Católica de Chile
2003, Invited Speaker at the Cell Biology Society Meeting, Chile
2003, Center for Cell Regulation and Pathology, FONDAF-Biomedicine
2003, Albert Einsein College of Medicine, NY
2003, Mount Sinai School of Medicine, NY,
2004, Universidad Austral de Chile
2004, VIII Congreso de la Sociedad Chilena de Inmunología
2004, Yale University, New Haven
2004, Invited speaker at the XXI Biochemistry Student Association Meeting, Chile
2004, University of Conneticut
2005, Los Alamos National Laboratory, New Mexico, USA
2005, Invited speaker at the Rheumatology Chilean Society Meeting.

Training of Students.

Undergraduate Theses:

Pablo González, Biochemistry Program, P. Univ. Católica de Chile (Graduated on Sep. 10th 2004)

Sofía Sepúlveda, Medical Technology Program, Univ. de Chile, (Completed: Dec. 2004)

Jorge Mora, Biochemistry Program, Univ. Austral de Chile (Exp. Grad. date: Dec. 2004)

Leandro Carreño, Biochemistry Program, P. Univ. Católica de Chile (Exp. Grad. date: Sep. 2005)

Andrés Herrada, Biochemistry Program, P. Univ. Católica de Valparaíso

Francisco Pérez, Biology Program, P. Univ. Católica de Chile

Julio Muñoz, Biology Program, P. Univ. Católica de Chile,

*Tatiana Belmar, Medicine “Inmersión” Program, P. Univ. Católica de Chile,

*Fernanda Cartes, Medicine “Inmersión” Program, P. Univ. Católica de Chile

Graduate Theses:

Jaime Tobar, Molecular Genetics and Microbiology Program, P. Univ. Católica de Chile (Exp. Grad. date: March. 2006).

Claudio Figueroa, Molecular Genetics and Microbiology Program, P. Univ. Católica de Chile (Exp. Grad. date: March 2007).

*Mirentxu Iruretagoyena, Medical Sciences Program, P. Univ. Católica de Chile (Exp. Grad. date: March 2007).

Jheimmy Díaz, Molecular Genetics and Microbiology Program, P. Univ. Católica de Chile (Exp. Grad. date: March. 2008).

Post-doctoral trainees:

Dr. Susan Bueno

Reviewer for the following peer-review journals.

Journal of Experimental Medicine

Journal of Immunology

Journal of Pharmacology and Experimental Therapeutics

Biochemical Pharmacology

Proceedings of the National Accademy of Sciences