

NAME Eduardo Davila	POSITION TITLE Assistant Professor
eRA COMMONS USER NAME edavil	Louisiana State University- Health Science Center Department of Pediatrics

EDUCATION / TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR	FIELD OF STUDY
New Mexico State University	B.S.	1998	Chem & Biochemistry Molecular Biology
Mayo Clinic Graduate School	Ph.D.	2002	Biomedical Sciences- Immunology
Mayo Clinic Graduate School of Medicine	Research Fellow	2003	Rheumatology Immunology
Mayo Clinic Graduate School of Medicine	Research Fellow	2004	Transplant Immunology
Louisiana State University- Health Science Center	Assistant Professor	2005	Tumor Immunology Department of Pediatrics

Positions

Post doctoral Fellowships

- 2005 Assistant Professor; Department of Pediatrics, Stanley S. Scott Cancer Center
LSU-Health Science Center
- 2003-05 Research in Xenotransplantation with Drs. McGregor and Byrne at the
Mayo Clinic, Rochester, MN
- 2002-03 Research in Rheumatoid Arthritis with Drs. Goronzy and Weyand at the
Mayo Clinic, Rochester, MN

Honors and Awards

- 2009 Received the "2009 Outstanding Achievements in Immunology" awarded by the Louisiana Cancer Research Consortium
- 2005 One of the Primary Investigators awarded under the NIH-P20-COBRE headed by
- 2003 Awarded a NIH supplemental Grant R01 AR41974/AR/NIAMS
- 2001 & 1998 "John Wallace Scholar Award in Immunology; 2001 National Autumn Immunology Conference
- 2001 Meritorious Honorarium for oral presentation from the Society for the Advancement of Chicanos and Native Americans in Science
- 1999 & 2000 "2000 American Association for Cancer Research Young Scholar Award"
- 1998 & 1999 Awarded a position in the Post-baccalaureate Patient-Oriented Translational Research Fellowship at the Mayo Clinic, Rochester, MN
- 1998 Member of the National Institute of Health (NIH)-funded Materials Access to Research Careers (**MARC**) at New Mexico State University in Las Cruces, NM
- 1997 Member of the NIH-funded Minority Biomedical Research Support Program (**MBRS**) at New Mexico State University in Las Cruces, NM
- 1994 Member of the National Science Foundation (NSF)-funded Materials Research Center for Excellence (**MRCE**) at the University of Texas at El Paso, TX

PUBLICATIONS

1. Kobayashi H. Kennedy R. Lu J. **Davila E.** Celis E. MHC-binding peptides as immunotherapeutics for cancer. *Immunological Investigations*. 29(2):105-10, 2000 May.
2. **Davila, E** & Celis, E.; Repeated administration of cytosine-phosphorothiolated guanine-containing

- oligonucleotides together with peptide/protein immunization results in enhanced CTL responses with anti-tumor activity. *Journal of Immunology*. 165(1):539-47, 2000 Jul 1
3. M E. Grossmann*, E **Davila***; E Celis . Avoiding Tolerance Against Prostatic Antigens With Subdominant Peptide Epitopes. *Journal of Immunotherapy* 2001;24:237-241
 4. **Davila, E.**, Maria G Velez, Carrie J Heppelmann, and Esteban Celis Creating space: An antigen-independent, pG-induced peripheral expansion of naive and memory T lymphocytes in a full T cell compartment. *Blood*. 100:2537-2540 Sep. 2002
 5. **Davila, E** and Celis, E. Generation of Anti-Tumor Immunity by CTL Epitope Peptide Vaccination, CpG-ODN Adjuvant and CTLA-4 Blockade. *Cancer Research*. 2003; 63: 3281-3288
 6. **Eduardo Davila***, Young Mo Kang*, Yong Wook Park*, Hirokazu Sawai*, Xiaowen He, Sergey Pryshchep, Jörg J. Goronzy, Cornelia M. Weyand. Immunotherapeutic Effects of CD8⁺28⁻56⁺ Regulatory T Cells in Human Autoimmune Disorders. *Journal of Immunology*, 2005; 174: 7292 - 7301.
 7. **E Davila**, Guerard W. Byrne, Vinay Rao, William R. Davies, Keiji S. Oi, Peter LaBrecche, Hugh McGregor, Allison Schwab, Henry D. Tazelaar, John S. Logan, Christopher G.A. McGregor. T cell responses during pig to primate xenotransplantation.; *Xenotransplantation* 2006 Jan;13(1):31-40.
 8. Byrne GW, Stalboerger PG, **Davila E**, Heppelmann CJ, Gazi MH, McGregor HCJ, LaBrecche PT, Davies WR, Rao VP, Oi K, Tazelaar HD, Logan JS, McGregor CGA. Proteomic identification of non-Gal antibody targets after pig-to-primate cardiac xenotransplantation. *Xenotransplantation* 2008; 15: 268–276.
 9. Zheng, L, Asprodites N, Keene AH, Rodriguez P, Brown KD, **Davila E**[§]. TLR9 engagement on CD4 T lymphocytes represses gamma-radiation-induced apoptosis through activation of checkpoint kinase response elements. *Blood*. 2008 Mar 1;111(5):2704-13.
 10. Asprodites N, Zheng L, Geng D, Velasco-Gonzalez C, Sanchez-Perez L, **Davila E**[§]. Engagement of toll-like receptor-2 on cytotoxic T-lymphocytes occurs *in vivo* and this interaction augments anti-tumor activity *FASEB J* 2008 Oct;22(10):3628-37.

Submitted:

Geng D, Zheng L, Asprodites N, Velasco-Gonzalez C, **Davila E**[§]. When Toll-like receptor and TCR signals collide: Mechanisms of costimulation. (2010; *Blood*)

Geng D, Zheng L, Asprodites N, Velasco-Gonzalez C, **Davila E**[§]. Enhancing tumor immunogenicity by amplifying TLR-MyD88 signals in tumor-specific CD8 T cells. (2009; *Cancer Research*)

* Shared primary; [§], Senior author

Book Chapters:

Vallejo, A., **Davila, E.**, Weyand, C., Goronzy, J., Rheumatic Diseases: Clinic of North America, Chapter 3. *Biology of T Lymphocytes*. 2004

E. Davila[§] and Esteban Celis; Making Room for Anti-tumor T cell responses. Humana Press; 2006

E. Davila[§]. A “Toll bridge” for T cells; Chapter 10. *Cancer Immune Therapy*, Research Signpost (In press 2009)

Invited Reviews:

1. **Davila, E.**, Geng, D, Perez, L, Riker, A; Research Highlights in Tumor Immunotherapy. November 2009, Vol. 1, No. 6, Pages 921-924
2. **Davila, E.**, and Jay Kolls, A 'Toll' for Th17 cell expansion; *Journal of Leukocyte Biology* (2010; In press)

3. Cori Morrison and **Eduardo Davila**; A Toll for malignant T cells? 2010; Immunotherapy (2010; In press)

Current

NIH-NCI, 1R01CA140917-01

07/01/09-06/30/14

“TLR Engagement on Tumor-Specific T Cells”
Mechanisms of Costimulation”

\$294,650 (total)/ yr

PI: **Eduardo Davila**

Description: The long term goal of this project is determine the cellular and molecular mechanisms by which TLR signaling in tumor-specific T cells potentiate antitumor responses against cancer.

NIH-NCRR, 3P20RR021970 (Supplement)

09/30/2009-08/2010

“Antitumor effects of TLR5 ligand-producing T cells”

\$344,630 (total)/ yr

PI: **Eduardo Davila**

Description: The objectives are: 1) to decipher the mechanisms by which TLR stimulation on melanoma tumor cells sensitize them to T cell mediated-death and 2) to determine the antitumor effects by and cellular responses of tumor-reactive T cells engineered to produce TLR5 agonist and delivery of TLR5 agonist to the tumor site.

NIH-NCRR, 5P20RR021970

09/30/2005-08/2010

“Mentoring Translational Research in Louisiana”

\$195,960 (total)/ yr

PI: Augusto Ochoa

Project Leader: **Eduardo Davila**

Description: The long term goal of this project is determine the effect of disrupting lymphocyte homeostasis on the expansion, function and persistence of vaccine-stimulated tumor-specific T lymphocytes and to assess whether modifying T cell homeostasis, plus vaccination, augments antitumor responses.

Completed medical research under the following state and/or government-funded grants

Louisiana Cancer Research Consortium,
Seeds funding- “Role of Toll-Like Receptor Stimulation
Enhancing DNA Repair Activity in T Lymphocytes”
PIs: **Eduardo Davila** and Tadahide Izumi

02/01/07-03/30/09LCRC

\$100,000 / yr

Description: We seek to define the molecular mechanisms through which TLR engagement on leukemic cells modulates damaged DNA repair. These studies focus on understanding the contribution that TLR signals within malignant T and B lymphocytes might have on inducing resistance to radiotherapies and chemotherapies.

National Institutes of Health / NIAID; T32 AI07425-11

2000-2002

“Ph.D. Training Grant in Basic Immunology”

PI: L. Pease

National Institutes of General Medical Sciences (NIGMS); R25 GM 55252,

1998-2000

“Patient-Oriented Research Program”. Mayo Clinic, Rochester, MN;

PI: R. McGee

National Institutes of General Medical Sciences (NIGMS)

1997-1998

“Minority Access to Research Careers” (MARC) at New Mexico State University in Las Cruces, NM. PI :

Michael D. Johnson

National Institutes of General Medical Sciences 1997
"Minority Biomedical Research Support Program" (MBRS) at New Mexico State University in Las Cruces, NM
PI : Glenn D Kuehn

National Science Foundation 1994
"Research Center for Excellence" (MRCE) at the University of Texas at El Paso, El Paso, TX.

NIH Review Service

2008; NIAID RFA 07-036 "Medical Countermeasures to Enhance Platelet Regeneration and Increase Survival Following Radiation Exposure"

Journal Reviewer

In the last 2 years I have reviewed for the following journals:

Blood

British Society for Immunology

Cancer Research

Journal of Immunology

Recent abstracts presented

2007 Keystone Meeting; On Memory Development: "A role for toll-like receptor engagement on T-cells?"

2007 AAI; "Toll-like receptor engagement on T cells co-stimulates T-cell responses"

Invited Presentations at National Conferences:

Keystone: Mobilizing Cellular Immunity for Cancer Therapy-

2009-Overexpressing TLR2-MyD88 in Tumor-specific CD8 T cells Enhances Antitumor Activity, Snowbird, Utah; 2009

American Association of Immunologist-

2009-Costimulatory Effect of TLR2-MyD88 signals in Tumor-specific CD8 T cells
Seattle, WA; 2009

American Association of Immunologist-

2009- (May 8th-12th) Co-chaired the 'Immunotherapy Block Session'
Seattle, WA; 2009

Invited Presentations:

Tulane University

2007; "TLR9 engagement on CD4 T lymphocytes represses gamma-radiation-induced apoptosis through activation of checkpoint kinase response elements"

La Jolla Institute for Allergy and Immunology

2007; "A role for toll-like receptor engagement on T cells?"

Louisiana State University Veterinary Dept.-Baton Rouge

2008; Hosted by Dr. Shulin Li

"Costimulatory effects of toll-like receptor engagement on tumor-specific T cells"

New Mexico State University

2008; "On Mentoring Underrepresented People in Biomedical Research" Sponsored by the Minority Access to Research Careers-National Institutes of Health

PROFESSIONAL MEMBERSHIPS AND SOCIETIES

American Association of Immunologists
American Association for Cancer Research

INSTITUTIONAL/DEPARTMENTAL ADMINISTRATIVE/EDUCATIONAL ACTIVITIES

Teaching activities

I currently do and/or have lectured several courses for the LSU Graduate School, Medical School, and Cancer Center. Below is a list of the courses according to the Department, and Topic.

- Dept. of Microbiology, Immunology, and Parasitology (MIP)
 - Tumor Immunology
 - Toll-like receptors in innate and adaptive immunity
 - T cell receptor rearrangement
 - T cell activation and memory development
- Dept. of Biochemistry
 - Immunoglobulin gene rearrangement
- Cancer Center
 - Immunology Journal Club (12 cr / year). I spearheaded the development of the Immunology Journal Club which meets every two weeks.

Mentorship activities

Postdoctoral/Research fellows

I currently supervise and mentor the following individuals:

- Dr. Degui Geng, Ph.D. is a post-doctoral research fellow in my laboratory since May 2007-present.
- Dr. Cori Morrison, M.D. is a hematology-oncology physician conducting her medical research fellowship in my laboratory. Her fellowship is for 1.5 years and extends from 2009 through 2011.
- Dr. Ratika Srivastava, Ph.D. is a post-doctoral research fellow in my laboratory since 2009-present.

Graduate School theses committees

1. Kong Chen; Department of Genetics (Ph.D. awarded in 2008)
2. Clorinda Johnson; Dept. of Microbiology, Immunology, and Parasitology (Ph.D. candidate)
3. June DeAngelo; Dept. of Microbiology, Immunology, and Parasitology (Ph.D. candidate)

Research Infrastructure and Core Facilities

My responsibility was to lead a group of clinicians and research scientists towards addressing the following aims. (1) Recommend strategies for better integrating medical students and residents with research activities and (2) Recommend approaches to enhance the recruitment/identification of young faculty members with interest and potential as researchers and suggest ways in which the School of Medicine could provide expanded professional development and mentoring to such individuals.

LSU Graduate School Qualifying Committee

2008-present

The primary responsibility is to ensure the university's commitment to the equitable treatment of all students and that the highest quality education standards are upheld.