

BIOGRAPHICAL SKETCH

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NAME Kathleen L. McGuire	POSITION TITLE Professor		
eRA COMMONS USER NAME kmcguire			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of New Mexico, Albuquerque, NM	B. S.	1979	Medical Technology
Univ. of TX Health Science Center, Dallas, TX	Ph. D.	1985	Immunology
California Institute of Technology, Pasadena, CA	Post-doc	1985-1987	Immunology
Dana Farber Cancer Center, Boston, MA	Post-doc	1987-1990	Human Retrovirology

A. Personal statement

As an experienced immunologist, I have demonstrated an on-going record of accomplishments that are relevant to this proposal. I have published numerous papers that included gene expression studies, flow cytometry, microarray data analysis, confocal and fluorescence microscopy, and quantitative RT-PCR. In more recent studies, we have focused on the racial disparities of cancer and gained extensive experience with the use of human tumor samples in immunohistochemistry and RNA isolation. We have been studying the role of immune responses in the racial disparities of colorectal cancer with John Carethers, Chair of Medicine at the University of Michigan since 2005. We have two publications together and are in the process of preparing two additional manuscripts at this time. We have had almost continuous funding from the National Cancer Institute at NIH for this work, at first through a partnership between SDSU and the UCSD Cancer Center. In 2012, we received an additional five years of funding from the National Cancer Institute to continue our collaborative studies on the racial disparities of colorectal cancer. We have submitted and had accepted over a dozen abstracts to meetings for poster and oral presentations; thus we and our students and post-docs continue to have regular opportunities to present our research. In 2010, I began collaborating with Dan Mercola, Director of Translational Biology at the University of California, Irvine, Medical Center and his colleagues on studies concerning the racial disparities of prostate cancer. We have already had our first publication accepted, with minor revision, by the International Journal of Cancer. Via these collaborations, publications, funding, and continued studies, I have demonstrated the appropriate expertise to participate in, and be successful at, the studies described in this proposal.

B. Professional Experience and Honors

Positions and Employment

1990-1996	Assistant Professor of Biology, San Diego State University, San Diego, CA.
1996-2000	Associate Professor of Biology, San Diego State University, San Diego, CA.
2000-present	Professor of Biology, San Diego State University, San Diego, CA.
2001-present	Associate Member, UCSD Comprehensive Cancer Center
2003-2006	Consultant, MPEX Pharmaceuticals, Inc.
2003-2008	Director of Research, CSU Program in Education and Research in Biotechnology
2004-2007	Director of the SDSU Flow Cytometry Facility
2006-2007	Interim Executive Director, CSU Program in Education and Research in Biotechnology
2006-2008	Director of Research, Vaxiion Therapeutics, Inc.
2008-2011	Scientific Advisory Board Member, Vaxiion Therapeutics, Inc.

Other Experience and Professional Memberships

1988-present	Member, American Association for the Advancement of Science
1995-present	Member, American Society of Microbiology
1998-present	Member, Sigma Xi, The Scientific Research Society

Honors and Awards

1985-1988	National Institute of Health Post-doctoral Fellowship Award
1989-1992	Leukemia Society Special Fellowship Award.
1992-1998	National Institute of Health (NCI) FIRST (R29) Award
1991-94, 98	SDSU Research, Scholarship, and Creative Activity Awards
1993, 1995-96	SDSU Affirmative Action Faculty Development Awards
1996-1997	SDSU Department of Biology Teacher-Scholar Award
2004	Fulbright Scholar, Santiago, Chile. Fellowship in Bioinformatics
2004-2006	SDSU Research, Scholarship, and Creative Activity Awards
2013	SDSU/College of Sciences Faculty Recognition Travel Award

C. Selected Peer-Reviewed Publications:

1. Fung, M., F. Rohwer and **K. L. McGuire**. 2003. IL-2 activation of a PI3K-dependent STAT3 serine phosphorylation pathway in primary human T-cells. *Cell. Signal.* **15**:625-636.
2. Bower, K. E., J. M. Fritz, and **K. L. McGuire**. 2004. Transcriptional repression of MMP-1 by p21^{SNFT} and reduced *in vitro* invasiveness of hepatocarcinoma cells. *Oncogene* **23**:8805-8814.
3. Fung, M. M., Y.-L. Chu, J. L. Fink, A. Wallace, and **K. L. McGuire**. 2005. IL-2- and STAT5-regulated cytokine gene expression in cells expressing the Tax protein of HTLV-1. *Oncogene* **24**:4624-4633.
4. **McGuire, K. L.** and D. S. Holmes. 2005. The role of complementary proteins in autoimmunity: an old idea reemerges with new twists. *Trends Immunol.* **26**:367-372.
5. Otrubova, K., T. J. Styers, P.-S. Pan, R. Rodriguez, S. R. McAlpine, and **K. L. McGuire**. 2006. Synthesis and novel structure-activity relationships of potent Sansalvamide A derivatives. *Chem. Commun.* **2006**:1033-1034.
6. Styers, T. J.; A. Kekec, R. Rodriguez, J. D. Brown, J. Cajica, P.-S. Pan, E. Parry, C. L. Carroll, I. Medina, r. Corral, S. Lapera, K. Otrubova, C.-M. Pan, **K. L. McGuire** and S. R. McAlpine. 2006. Synthesis of Sansalvamide A derivatives and their cytotoxicity in the colon cancer cell line HT-29. *Bioorg. Med. Chem.* **14/16**:5625-5631.
7. Giacalone, M. J., R. A. Sabbadini, A. L. Chambers, S. Pillai, N. L. Berkeley, M. W. Surber and **K. L. McGuire**. 2006. Immune responses elicited by bacterial minicells capable of simultaneous DNA and protein antigen delivery. *Vaccine* **24**:6009-6017.
8. Giacalone, M. J., J. C. Zapata, N. L. Berkley, R. A. Sabbadini, Y.-L. Chu, M. S. Salvato, and **K. L. McGuire**. 2007. Immunization with non-replicating *E. coli* minicells delivering both protein antigen and DNA protects mice from lethal challenge with Lymphocytic Choriomeningitis Virus. *Vaccine* **25**:2279-2287.
9. Otrubova, K., **K. L. McGuire** and S. R. McAlpine. 2007. A novel platform targeting drug-resistant colon cancers. *J. Med. Chem.* **50**:1999-2002.
10. Pan, P.-S., **K. L. McGuire** and S. R. McAlpine. 2007. Identification of compounds potent against pancreatic cancer cell lines. *Bioorg. Med. Chem. Lett.* **17**:5072-5077.
11. Otrubova, K., G. H. Lushington, D. V. Velde, **K. L. McGuire** and S. R. McAlpine. 2008. Comprehensive study of Sansalvamide A derivatives and their structure-activity relationships against drug-resistant colon cancer cell lines. *J. Med. Chem.* **51**:530-544.
12. Xu, T, S. Maloy and **K. L. McGuire**. 2009. Macrophages influence Salmonella host-specificity *in vivo*. *Microbial Path.* **47**:212-222.
13. Devaraj, B., A. Lee, B. L. Cabrera, K. Miyai, L. Luo, S. Ramamoorthy, T. Keku, R. S. Sandler, **K. L. McGuire**, and J. M Carethers. 2010. Relationships of EMASST and microsatellite instability among patients with rectal cancer. *J. Gastrointest. Surg.* **14**:1521-1528.
14. Lee, S.-Y., K. Miyai, H. S. Han, D.-Y. Hwang, M. K. Seong, H. Chung, B. H. Jung, B. Devaraj, K. L. McGuire, J. M. Carethers. 2012. Microsatellite instability, EMASST, and morphology associations with T cell infiltration in colorectal neoplasia. *Dig Dis Sci.* **57**:72-78.
15. Kinseth M, A., Z. Jia, F. Rahmatpanah, A. Sawyers, M. Sutton, J. Wang-Rodriguez, D. Mercola and K. L. McGuire. Altered Gene Expression by Prostate Tumor and Stroma in African American and Cell-type Matched Caucasians Reveal that Stroma is the Site of Aggressive Changes. *International J Cancer* (accepted with minor revision 3/2013; resubmitted)

D. Research Support

Ongoing Research Support

NIH U01 (NCI 1U01CA162147-01A1)

9/1/12 – 8/31/17

PI: John M. Carethers, Chair of Medicine, University of Michigan;
"Inflammatory Differentiation of Colorectal Cancer among African Americans"

My role on this project is as the co-investigator required for this collaborative U01. We are responsible for doing the immunological profiling and other immunology studies proposed in this project to determine the role of immune responses in racial disparities of colorectal cancer.

Role: co-Investigator

California State University Program for Education and Research in Biotechnology
11/30/14

6/1/13 –

ENTREPRENEURIAL JOINT VENTURE MATCHING GRANT PROGRAM

PI: Kathleen L McGuire, Department of Biology, San Diego State University
"Role of tumor/stroma interactions in racial disparities of prostate cancer"

My role on this project is as the principal investigator. This grant is designed to provide seed funding for collaborative projects between individuals at different institutions. Dan Mercola at UCI is my collaborator on this project. Students in my laboratory will be exploring the role of stroma in both immune and cell-cell interactions with extracellular matrix processes that may play a role in the racial disparities observed in prostate cancer.

Role: PI

