郁华 教授

Professional Experience

2011 - present, Co-leader, Cancer Immunotherapeutics Program, Comprehensive Cancer Center, City of Hope, Duarte, CA

2005 - present, Professor, Department of Cancer Immunotherapeutics & Tumor Immunology, Beckman Research Institute of City of Hope, Duarte, CA

2002 - 2005, Associate Professor, Immunology Program, Moffitt Cancer Center

1995 - 2002, Assistant Professor, Immunology Program, Moffitt Cancer Center

1994 - 1995, Research Scientist, Department of Microbiology and Immunology, University of Michigan

Education and Training

1989 - 1992, University of Michigan, Ann Arbor, MI, Postdoc, Molecular Biology

1988, Columbia University, New York, NY., Ph.D., Molecular Biology

1983, Columbia University, New York, NY., B.A., Biology

Honors and Awards

2011 - 2012, Recipient, Tim Nesvig Lymphoma Fellowship Award

2004, Scientist of the Year Award, H. Lee Moffitt Cancer Center and Research Institute

2004 - present, Member, CII Study Section, National Institutes of Health

1990 - 1992, American Cancer Society Postdoctoral Fellowship

1989, NIH Postdoctoral Training Grant Fellowship

1983 - 1988, Faculty Fellow, Columbia University

1982 - 1983, Helena Rubinstein Foundation Scholarship (undergraduate), Columbia University

Laboratory Overview

Our research focuses on how tumor cells and "normal" cells interact with each other in the tumor organ. By doing so, we hope to generate next generation of anticancer drugs that can attack cancer on multiple fronts.

Research Interest and Activities
A tumor's ability to proliferate, resist apoptosis, invade and thwart the immune system is the essence of cancer. Although many anti-cancer therapies show promise, most are aimed at the tumor cell as an independent entity and ignore the importance of the many cell types that constitute the tumor microenvironment. An emerging picture of the tumor as an organ highlights the role of multiple tumor-associated cells, including fibroblasts, endothelial cells, hematopoietic cells/immune cells and stem cells, that interact intimately with the transformed cells in modulating the oncogenic process.

My group has shown that Stat3, which is constitutively-activated in tumor cells, is also persistently activated in normal cells associated with the tumor. We have further demonstrated that Stat3 signaling coordinates multiple levels of crosstalk between tumor cells and their microenvironment, affecting tumor growth, apoptosis, angiogenesis and immune surveillance.

Our work, along with other studies, has established that Stat3 in tumor cells regulates a large array of genes important for proliferation, survival, angiogenesis, invasion/metastasis and immune suppression. Its central role in organizing the tumor microenvironment makes Stat3 a promising target both in tumor cells and in the normal cells that constitute the tumor organ.

The goal of my program is to use novel technologies to target Stat3 in the entire tumor, thereby inducing its collapse through multiple mechanisms, while sparing cells in the normal organs.

Selected Publications

Yu H*, Pardoll D* and Jove* R. 2009 STATs in Cancer Inflammation and Immunity: a Leading Role of Stat3. Nature Reviews Cancer. 9(11):798-809. PMID: 19851315. *Co-corresponding authors. Featured Article.

Kortylewski M, Swiderski P, Herrmann A, Kujawski, M, Wang L, Deng J, Kowolik C, Lee H, Soifer H, Forman S, Rossi J, Pardoll D, Jove R and **Yu H.** 2009. In vivo delivery of siRNA to immune cells by conjugation to a TLR9 agonist enhances antitumor immune responses. Nature Biotechnology, 27(10) 925-932. PMID: 19749770. Featured/Cover article.

Wang L, Yi TS, Pardoll D, Zeng DF and **Yu H.** 2009. IL-17 can promote tumor growth through an IL-6/Stat3 signaling pathway. Journal of Experimental Medicine. 6206(7):1457-646.

Lee HY, Deng JH, Herrmann A, Niu GL, Xin H, Li Z-W, Kujawski M, Forman S, Jove R, Pardoll D and **Yu H.** 2009. Persistently-activated Stat3 maintains NF-kappaB constitutive activity in tumors. Cancer Cell.15(4):283-93. PMID: 19345327.

Kortylewski M, Kujawski M, Herrmann A, Wang L, and **Yu H.** 2009. Stat3 constrains the efficacies of TLR9 agonist-based immunotherapy. Cancer Research. 69(6):2497-2505. PMID: 19258507.

Xin H, Du Y, Herrmann A, Figlin R and **Yu H.** 2009. Stat3 inhibition by sunitinib induces apoptosis of renal cell carcinoma cells and reduces immunosuppressive cells. Cancer Research.69(6):2506-13. PMID: 19244102.

Kortylewski M, Xin H, Kujawski M, Lee H-Y, Liu Y, Harris T, Drake C, Pardoll D and **Yu H.** 2009. Regulation of the IL-23/IL-12 balance by Stat3 signaling in the tumor microenvironment. Cancer Cell.15: 114-123. PMID: 19185846.

Kujawski M, Kortylewski M, Lee H.Y, Herrmann A, Kay H, and **Yu H.** 2008. Stat3 mediates myeloid-cell-dependent tumor angiogenesis in mice. Journal of Clinical Investigation.118(10):3367-77. PMID: 18776941.

Kortylewski M and **H Yu.** 2008. Role of Stat3 in suppressing anti-tumor immunity. Current Opinion in Immunology. 20(2):228-33. PMID: 18479894.

Yu* H, Kortylewski M and Pardoll D. 2007. Crosstalk between cancer and immune cells: the role of STAT3 in the tumor microenvironment. Nature Reviews Immunology.7:41-51. *Correspondent author.

Kortylewski M, Kujawski M, Wang T-H, Wei S, Zhang S, Pilon-Thomas S, Niu G-L, Kay H, Kerr WG, Mule J, Jove R, Pardoll D and **Yu H.** 2005. Inhibiting Stat-3 signaling in the hematopoietic system elicits multicomponent therapeutic antitumor immune responses. Nature Medicine.11(12):1314-21.

Yu* H and Jove* R. 2004. The Stats of Cancer – New Molecular Targets Come of Age. Nature Reviews Cancer, 4: 97-105. *Co-correspondent authors.

Wang T-H, Niu G-L, Kortylewski M, Burdelya L, Shain K, Zhang S-M, Bhattacharya R, Gabrilovich D, Heller R, Coppola D, Dalton D, Jove R, Pardoll D and **Yu H.** 2004. Regulation of the innate and adaptive immune responses by Stat3 signaling in tumor cells. Nature Medicine10:48-54.