

**BIOGRAPHICAL SKETCH**

NAME	POSITION TITLE
Sandeep Krishna Agarwal	Assistant Professor
eRA COMMONS USER NAME	Department of Medicine, Division of Rheumatology UT Houston Medical School

EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Texas at Austin	B.A.	1989	Microbiology
University of Texas Houston Medical School	M.D.	2000	Medicine
University of Texas Houston Medical School	Ph.D.	2000	Immunology

**A. Positions and Honors.****Positions and Employment**

2000-2002	Internship, Residency, Internal Medicine, Brigham and Women's Hospital, Boston, MA
2002-2006	Clinical Fellow in Rheumatology, Brigham and Women's Hospital, Boston, MA
2002-2006	Research Fellow in Rheumatology, Brigham and Women's Hospital, Boston, MA
2006-2007	Instructor in Medicine, Division of Rheumatology, Brigham and Women's Hospital, Boston, MA
2007-	Assistant Professor, Division of Rheumatology, U.T.-Houston Medical School, Houston, TX

**Licensure and Certification**

2001	Massachusetts Registered Physician
2004	Internal Medicine, American Board of Internal Medicine
2005	Rheumatology, American Board of Internal Medicine
2007	Texas Registered Physician

**Other Experience and Professional Memberships**

1993	Member, American Medical Association
1993 - 1995	Member, Educational Computer Services Advisory Committee, UT Houston Med School
1994 - 1996	Member, Faculty Student Relations Committee, UT Houston Med School
1994 - 1996	Member, Medical School Curriculum Committee, UT Houston Med School
1995 - 2000	Member, Institutional Review Board, UT Houston Med School
1997 - 2001	Member, Clinical Immunology Society
1997 -	Member, American Association of Immunologist
2002 -	Member, American College of Rheumatology

**Honors**

1989	IEEE-MTT Academic Undergraduate Scholarship, University of Texas at Austin
1989	Phi Eta Sigma and Alpha Lambda Delta Honor Societies, University of Texas at Austin
1993	Phi Beta Kappa Honor Society, University of Texas at Austin
1993	Dean's Honored Graduate, University of Texas at Austin
1997	N.A.S.A. Graduate Research Fellowship, University of Texas Houston Medical School
1998	U.T. Health Science Center & M.D. Anderson Cancer Center Presidential Fellowship
2000	American College of Rheumatology and Amgen Rheumatology Research Fellowship

2000	Alpha Omega Alpha Medical Honor Society, University of Texas Houston Medical School
2000	Gian Luigi Gianotti Endowed Memorial Scholarship for Rheum, UT Houston Med School
2002	American College of Rheumatology and Amgen Research Fellowship Training Award
2004	Abbott Immunology Scholar Award, Brigham and Women's Hospital

## **B. Selected peer-reviewed publications.**

### Published Manuscripts

1. Phelps P, **Agarwal SK**, Speitel GE, Georgiou G. 1992. Methylosinus trichosporium OB3b mutants having constitutive expression of soluble methane monooxygenase in the presence of high levels of copper. *Applied Environmental Microbiology*. 58 : 3701-3708.
2. Fitch MW, Graham D, Arnold R, **Agarwal SK**, Phelps P, Speitel GE, Georgiou G. 1993. Phenotypic characterization of copper resistant mutants of Methylosinus trichosporium OB3b. *Applied Environmental Microbiology*. 59 : 2771-2776.
3. Fisk B, Ioannides CG, **Agarwal SK**, Wharton JT, Obrien CA, Restifo N, Glisson BS. 1994. Enhanced expression of HLA-A,B,C and inducibility of TAP-1, TAP-2 and HLA-A,B,C by IFN-gamma in a multidrug resistant small cell line cancer line. *Lymphokine and Cytokine Research*. 13 : 2 : 125-131.
4. **Agarwal SK**, and Marshall GD. 1998. *In vivo* alteration in type-1 and type-2 cytokine balance – a possible mechanism for elevated total IgE in HIV-infected patients. *Human Immunology*. 59 : 99-105.
5. **Agarwal SK**, and Marshall GD. 1998. Glucocorticoid induced type-1/type-2 cytokine alterations in humans - a model for stress-related immune dysfunction. *Journal of Interferon and Cytokine Research*. 18(12) : 1059-1068.
6. Marshall GD, **Agarwal SK**, Lloyd CS, Cohen L, Henninger EM, Morris GJ. 1998. Cytokine dysregulation in healthy medical students associated with exam stress. *Brain, Behavior, and Immunity*. 12 (4) : 297-307.
7. **Agarwal SK** and Marshall GD. 1999. Perimenstrual alterations in the type-1/type-2 cytokine balance. *Annals of Allergy, Asthma, and Immunology*. 83 (3) : 222-228.
8. **Agarwal SK** and Marshall GD. 2000. Beta-adrenergic modulation of type-1/type-2 cytokine balance. *Journal of Allergy and Clinical Immunology*. 105 (1) : 91-98.
9. Marshall GD and **Agarwal SK**. 2000. Stress, immune regulation and immunity : applications for asthma. *Allergy and Asthma Proceedings*. 21 (4) : 241-246.
10. **Agarwal SK** and Marshall GD. 2000. Role of CD28/B7 costimulation in the dexamethasone induced suppression of IFN- $\gamma$ . *Journal of Interferon and Cytokine Research*. 20 (11) : 927-934.
11. Cohen L, Marshall GD, Cheng L, **Agarwal SK**, Wei Q. 2000. DNA repair capacity in healthy medical students during and after exam stress. *Journal of Behavioral Medicine*. 23(6) : 531-544.
12. **Agarwal SK** and Marshall GD. 2001. Stress effects on immunity and its application to clinical immunology. *Clinical and Experimental Allergy*. 31(1) : 25-31.
13. **Agarwal SK** and Marshall GD. 2001. Glucocorticoids promote type-2 cytokine production primarily through the inhibition of type-1 cytokines. *Journal of Interferon and Cytokine Research*. 21(3) : 147-55.
14. Cohen L, Baile WF, Henninger E, **Agarwal SK**, Kudelka AP, Lenzi R, Sterner JM, Marshall GD. 2003. Physiological and psychological effects of delivering bad medical news using a simulated physician-patient scenario. *Journal of Behavioral Medicine*. 26(5) : 459-71.
15. **Agarwal SK**, Maier AL, Chibnik LB, Coblyn JS, Fossel A, Lee R, Fanikos J, Fiumara K, Lowry C, Weinblatt ME. 2005. Pattern of Infliximab Utilization in Rheumatoid Arthritis Patients at an Academic Medical Center. *Arthritis and Rheumatism*. 53 (6) : 872-78.
16. **Agarwal SK** and Brenner MB. 2006. Role of Adhesion Molecules in Inflammatory Arthritis. *Current Opinion in Rheumatology*. 18 (3) : 268-76.
17. Kiener HP, Lee DM, **Agarwal SK**, Brenner MB. 2006. Three-dimensional Fibroblast-like Synovocyte Organ Culture with Cadherin-11 Mediated Lining Formation. *American Journal of Pathology*. 168 (5) : 1486-99.
18. **Agarwal SK**, Monach PA, Docken WP, Coblyn JS. 2006. Characterization of Relapses in Adult Idiopathic Inflammatory Myopathies. *Clinical Rheumatology*. 25 : 476-81.

19. Lee DM, Kiener HP, **Agarwal SK**, Noss, EH, Watts, GW, Osamu Chisaka, Masatoshi Takeichi, Brenner MB. 2007. Role of Cadherin-11 in Synovial Lining Development and Inflammatory Arthritis. *Science*. 315 (5814): 1006-1010.
20. **Agarwal SK**, Lee DM, Kiener HP, Brenner MB. Co-Expression of Mesenchymal Cadherins, Cadherin-11 and N-cadherin, on Fibroblast-like Synoviocytes. Manuscript submitted for publication.
21. **Agarwal SK**, Glass RJ, Shadick NA, Coblyn JS, Anderson RJ, Maher NE, Weinblatt ME, Solomon DH. Predictors of Discontinuation of TNF inhibitors in Rheumatoid Arthritis Patients. Manuscript submitted for publication.
22. **Agarwal SK**, Tan FK, Arnett FC. Scleroderma : A complex genetic disease. Invited review, manuscript in preparation. *Rheumatic Disease Clinics of North America*.

#### Published Abstracts

1. Glisson B, Fisk B, Restifo N, **Agarwal SK**, Ioannides CG. 1994. Enhanced expression of HLA-A,B,C and inducibility of TAP-1, TAP-2 and HLA-A,B,C by IFN-gamma in a multidrug resistant small cell line cancer line. *Proceedings of the American Association for Cancer Research*. 35 : 346.
2. Marshall GD, Cassidy CC, **Agarwal SK**, Henninger EM. 1995. Cytokine basis for decreased cellular immune response in elderly humans. *Journal of Allergy and Clinical Immunology*. 95 : 362.
3. **Agarwal SK**, Shippy AM, Henninger EM, Marshall GD. 1997. Immune alterations in healthy females during a normal menstrual cycle. *Journal of Allergy and Clinical Immunology*. 99 (1) :S27.
4. Marshall GD, **Agarwal SK**, Henninger EM. 1997. Safety and efficacy of allergen immunotherapy (AIT) in HIV+ male with severe allergic rhinitis. *Journal of Allergy and Clinical Immunology*. 99 (1) : S48.
5. **Agarwal SK**, and Marshall GD. 1998. *In vivo* alteration in type-1 and type-2 cytokine balance – a possible mechanism for elevated total IgE in HIV-infected patients. *Journal of Allergy and Clinical Immunology*. 101(1) : S56.
6. **Agarwal SK**, and Marshall GD. 1998. Type-1, not type-2 cytokines, are sensitive to dexamethasone. *FASEB*. 12 (5) : A764.
7. Marshall GD, **Agarwal SK**, Henninger EM, Morris GJ. 1998. Type1/Type2 cytokine balance is altered during exam stress in medical students. *FASEB*. 12 (5) : A485.
8. Skinner MQ, **Agarwal SK**, Marshall GD. 1998. Monophasic oral contraceptives promote type-2 cytokine production during the menstrual cycle. *FASEB*. 12 (5) : A726.
9. **Agarwal SK** and Marshall GD. 1999. Dexamethasone differentially regulates IL-4 and IL-5 production *in vitro*. *Journal of Allergy and Clinical Immunology*. 103 (1 Pt. 2) : S86.
10. Cohen L, Baile WF, Marshall GD, Kudelka AP, **Agarwal SK**, Lenzi R, deMoor C. 1999. Immune dysregulation during exposure to acute and chronic stressors in healthy medical students. *Psychosomatic Medicine*. 61 : 83-130.
11. Marshall GD, **Agarwal SK**, Cohen L, Baile WF, Morris GJ, Kudelka AP. 1999. Acute Stress Increases NK and TH1 Cytokine Production in Human PBMC. *Clinical Immunology*. 90 (3) : 451.
12. Cornelius D, **Agarwal SK**, Riley WJ, Marshall GD. 1999. Insulin-specific cytokine balance in pre-diabetics. *Diabetes*. 48 (Supplement 1) : A212.
13. Cohen L, Baile WF, Kudelka AP, **Agarwal SK**, Lenzi R, Globber G, Beale F, Marshall GD. 1999. Physiological and psychological effects of delivering bad medical news: Implications for educational workshops. *International Journal of Gynecological Cancer*. 9(1) : 145.
14. **Agarwal SK** and Marshall GD. 1999. Stress hormone induced alterations in *in vitro* type-1/type-2 cytokine production. *FASEB*. 13 (4 Pt. 1) : A320.
15. Marshall GD, **Agarwal SK**, Glaser R. 1999. Enhancement of chronic HIV infection *in vitro* by stress hormones. *Neuroimmunomodulation*. 6(3) : 235.
16. **Agarwal SK** and Marshall GD. 1999. Stress hormone induced alterations in *in vitro* type-1/type-2 cytokine production. *Journal of Investigative Medicine*. 47 (4) : 181A.
17. Cohen L, Wei Q, Cheng L, **Agarwal SK**, Marshall GD. 2000. Increased DNA repair capacity in response to exam stress in healthy medical students. *Psychosomatic Medicine*. 62 : 101.

18. **Agarwal SK** and Marshall GD. 2000. Dexamethasone promotes type-2 cytokine production primarily through the inhibition of type-1 cytokines. *Journal of Allergy and Clinical Immunology*. 105 (1 Pt. 2) : S108.
19. **Agarwal SK** and Marshall GD. 2000. Role of CD28/B7 costimulation in the dexamethasone induced suppression of IFN- $\gamma$ . *FASEB*. 14 (6) : A1114.
20. **Agarwal SK**, Henninger EM, Marshall SE, Marshall GD. 2000. Differential modulation of individual type-2 cytokines by dexamethasone. *FASEB*. 14 (6) : A925.
21. Lee DM, Kiener H, **Agarwal SK**, Higgins J, Brenner MB. 2004. Synovial cadherin-11. *Arthritis Research and Therapy*. 6 (Supplement 3) : 96.
22. **Agarwal SK**, Dellaripa P, Maher, NE, Weinblatt ME, Bilics JA, Karlson JE, Maher CP, Matthews HM, Coblyn J, Anderson R, Shadick NA. 2004. Detecting Occult Lung Disease in Rheumatoid Arthritis: The significance of respiratory symptoms using a dyspnea screening questionnaire. *Arthritis and Rheumatism*. 50 (12) : 4087.
23. **Agarwal SK**, Maier AL, Chibnik LB, Coblyn JS, Fossel A, Lee R, Fanikos J, Fiumara K, Lowry C, Weinblatt ME. 2005. Pattern of Infliximab Utilization in Rheumatoid Arthritis Patients at an Academic Medical Center. *Arthritis and Rheumatism*. 52 (9) : S345.
24. **Agarwal SK**, Shadick NA, Karlson EW, Glass RJ, Maher NE, Weinblatt ME, Solomon DH. 2005 Predictors of Discontinuation of Anti-TNF-alpha Therapy in Rheumatoid Arthritis. *Arthritis and Rheumatism*. 52 (12) : 4086.
25. Lee DM, Kiener HP, **Agarwal SK**, Osamu Chisaka, Masatoshi Takeichi, Brenner MB. 2005. Role of Cadherin-11 in Synovial Lining Development and Inflammatory Arthritis. *Clinical and Experimental Rheumatology*. In Press.
26. Kiener HP, Lee DM, **Agarwal SK**, Brenner MB. 2005. Three-Dimensional Fibroblast-like Synoviocyte Organ Culture with Cadherin-11 Mediated Lining Formation. *Clinical and Experimental Rheumatology*. In Press.
27. Heller JE, **Agarwal SK**, Chibnik LB, Maher NE, Solomon DH, Parker A, Roubenoff R, Plenge RM, Weinblatt ME, Shadick NA. 2006. PTPN22 and HLA SE are not Associated with Discontinuation of TNF $\alpha$  Inhibitors or Methotrexate in a Large RA Cohort. *Arthritis and Rheumatism*. 54 (9) : S228.