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**Field of Research:**

Mechanisms and Regulation of Genomic Stability

**Education:**

- 1995 Ph.D. **Biochemistry.** Indian Institute of Science, Bangalore, India.
- 1987 M.S. **Biotechnology.** Jawaharlal Nehru University, Delhi, India.
- 1985 B.S. **Chemistry (Honors).** St. Stephen's College, University of Delhi, Delhi, India.

**Academic Appointments:**

- 2005-present Assistant Professor, Department of Molecular Virology, Immunology and Medical Genetics, Ohio State University, Columbus, OH.
- 2000-2005 Research Instructor, Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, PA.
- 1995-2000 Postdoctoral fellow, University of Vermont, Burlington, VT, and Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, PA.
- 1995 Research Associate, Indian Institute of Science, Bangalore, India.
- 1994-1995 Project Assistant, Indian Institute of Science, Bangalore, India.

**Teaching Experience:**

- 2006-present Molecular Genetics (MG701). Ohio State University, Columbus.
- 2000-2004: "Molecular Basis of Cancer" (GE 652) under the Genetics program in the Department of Microbiology and Immunology, Thomas Jefferson University, Philadelphia.

**Awards and Fellowships:**

- 1994-95 Council for Scientific and Industrial Research-Research Associate, India
- 1994 The Young Scientist Award for the IUBMB-Congress, 1994
- 1990-1993 Senior Research Fellowship, Council for Scientific and Industrial Research, India
- 1988-1990 Junior Research Fellowship, Council for Scientific and Industrial Research, India
- 1988 Council for Scientific and Industrial Research Award - Top 5% in India

**Patents:**

Compositions, Kits and Methods for Effecting Adenine Nucleotide Modulation of DNA mismatch recognition proteins. Scott Gradia, **Samir Acharya** and Richard Fishel. Patent No. 09/143,571.

**Professional Service:**

Adhoc Reviewer Low Dose Radiation Study Section – Department of Energy (2006)  
Faculty Judge for OSUMC Graduate and Postgraduate Research Day (2006)  
Faculty Judge for The Ohio State University Denman Undergraduate Research Forum (2006).  
Graduate Faculty Representative for Doctoral Final Exam (2007)  
Faculty Judge for OSUMC Graduate and Postgraduate Research Day (2007)  
Faculty Member – Graduate Studies Committee (2007)

**Professional Society Memberships:**

American Society for Microbiology, USA.  
American Association for the Advancement of Science, USA.  
Society for Biological Chemists, India.

**Grants:**

Ohio Cancer Research Associates (Awarded Jul 2007- Jul 2009):  
PI: Samir Acharya  
Title: Role of Mismatch Repair in Cell Survival

**Publications:**

*Manuscripts in preparation:*

1. Rosenberg, A. and **Acharya, S.** 2007. Molecular Characterization of the MutL Switch functions.
2. Rosenberg, A. and **Acharya, S.** 2007. Adenine nucleotide processing functions of Mismatch Repair Proteins.
3. J. Qian, A. A. Sarnaik, T. M. Bonney, J. Kirsey, K. A. Combs, **S. Acharya**, K. Stiegerwald, G. K. Behbehani, M. C. Barton, A. M. Lowy and J. Groden (2007). The APC tumor suppressor inhibits DNA replication by directly binding to DNA via its carboxyl-terminus.
4. T. Snowden, C. Schmutte, **S. Acharya**, and R. Fishel (2007). Characterization of hMSH4-hMSH5 adenosine nucleotide processing and interactions with homologous recombination machinery.

*Chapters:*

5. **Acharya, S.**, and Fishel, R. 2006. The Mechanism of DNA Mismatch Repair from Bacteria to Human. In *DNA Damage Recognition*, eds W. Siede, Y. W. Kow and P. Doetsch, pp 463-482.

**Peer-reviewed Primary publications:**

6. Snowden, T., **S. Acharya**, C. Butz, M. Berardini, and R. Fishel. 2004. hMSH4-hMSH5 Recognizes Holliday Junctions and Forms a Meiosis-Specific Sliding Clamp. *Molecular Cell* 15, 437-51.
7. **Acharya, S.**\*, P. Foster, P. Brooks and R. Fishel. 2003. The Coordinated Functions of MutS and MutL in Mismatch Repair. *Molecular Cell* 12, 233-246.  
\* **corresponding author**
8. Haldar, D., **S. Acharya**, and M. R. S. Rao. 2002. A Novel Structure-Specific Endonuclease Activity Associated with Polypyrimidine-Tract Binding (PTB) Related Protein from Rat Testis. *Biochemistry* 41, 11628-41.
9. Schmutte, C., M. M. Sadoff, K. S. Shim, **S. Acharya**, and Fishel, R. 2001. The interaction of DNA mismatch repair proteins with human exonuclease I. *J. Biol. Chem.*, 276, 33011-33018.
10. Gradia, S., **S. Acharya**, R. Fishel. 2000. The role of mismatched nucleotides in activating the hMSH2-hMSH6 molecular switch. *J. Biol. Chem.* 275, 3922.
11. Saleh, A., S. M. Srinivasula, **S. Acharya**, R. Fishel, E. S. Alnemri. 1999. Cytochrome c and dATP-mediated oligomerization of Apaf-1 is a prerequisite for procaspase-9 activation. *J. Biol. Chem.* 274, 17941-17945.
12. Guerrette, S., **S. Acharya**, R. Fishel. 1999. The Interaction of the Human MutL Homologues in Hereditary Nonpolyposis Colon Cancer. *J. Biol. Chem.* 274, 6336-6341.
13. Gradia, S., D. Subramaniam, T. Wilson, **S. Acharya**, J. Griffith, R. Fishel. 1999. hMSH2-hMSH6 Forms a Hydrolysis-Independent Sliding Clamp on Mismatched DNA. *Molecular Cell* 3, 255-261.
14. Gradia, S., **S. Acharya**, R. Fishel. 1997. The human mismatch recognition complex hMSH2-hMSH6 functions as a novel molecular switch. *Cell* 91, 995-1005.
15. Myers, M., M. Theodosiou, **S. Acharya**, E. Odegaard, T. Wilson, J. E. Lewis, T. W. Davis, C. V. P. Wilson, R. Fishel, D. A. Boothman. 1997. Cell cycle regulation of the human DNA mismatch repair genes hMSH2, hMLH1 and hPMS2. *Cancer Research* 57, 206-208.
16. Pearson, C. E., A. Ewel, **S. Acharya**, R. Fishel, R. R. Sinden. 1997. Human MSH2 binds to trinucleotide repeat DNA structures associated with neurodegenerative diseases. *Human Mol. Gen.* 6, 1117-1123.
17. **Acharya, S.**, T. Wilson, S. Gradia, M. F. Kane, S. Guerrette, G. T. Marsischky, R. Kolodner, R. Fishel. 1996. hMSH2 forms mispair-binding complexes with hMSH3 and hMSH6. *Proc. Natl. Acad. Sci. USA* 93, 13629-13634.
18. Mello, J. A., **S. Acharya**, R. Fishel, J. Essigman. 1996. The mismatch-repair protein hMSH2 binds selectively to DNA adducts of the anticancer drug cisplatin. *Chemistry and Biology* 3, 579-589.

19. **Acharya, S.**, N. R. Choudhury, M. R. S. Rao. 1996. Characterization of a DNA pairing activity copurifying with DNA ligase in a partially purified extract from rat testis. *Biochemica et Biophysica Acta* 1309,131-146.

***Other Publications:***

20. Fishel, R., **S. Acharya**, et al. 2000. Signaling Mismatch Repair: The mechanics of an adenosine-nucleotide molecular switch. *Cold Spring Harbor Symposia on Quantitative Biology*. Vol. LXV. 217-224.
21. **Acharya, S.**, A. Reitmar, *et. al.* 1996. Human Mutators, Mismatch Repair and the Development of Cancer. "Accomplishments in Cancer Research 1995" (Ed. J.G. Fortner and P. A. Sharp) pp 178-187.

**Abstracts and Invited Presentations (since 1989):**

- American Society for Microbiology Conference on DNA Repair, Bermuda, 2004.  
"Adenine Nucleotide Dependent Commitments in Mismatch Repair"  
**Acharya, S.**, P. Foster, P. Brooks and R. Fishel **Poster**
- American Society for Microbiology Conference on DNA Repair and Mutagenesis, Bermuda, 2004.  
"hMSH4-hMSH5 recognizes Holliday Junctions and forms a meiosis specific sliding clamp that embraces homologous chromosomes".  
Snowden, T., **S. Acharya**, C. Butz, M. Berardini and R. Fishel. **Poster**
- American Society for Microbiology Conference on DNA Repair and Mutagenesis, Bermuda, 2004.  
"Studies on the function of hMLH1-hPMS1 and hMLH1-hMLH3".  
Charbonneau, N., **S. Acharya**, and R. Fishel. **Poster**
- University of Delhi, South Campus Delhi, India, 2004  
"The Molecular Switch Mechanism of DNA Mismatch Repair".  
**Acharya, S.** **Invited Talk**
- Biology of DNA-50 years of DNA, Cold Spring Harbor Laboratory, NY, 2003.  
"The Mechanics Of Mismatch Repair in *Escherichia coli*".  
**Acharya, S.**, P. Foster, P. Brooks and R. Fishel **Poster**
- Gordon Research Conference on Mutagenesis, Bates College, Lewiston, Maine, 2002  
"Adenine Nucleotide Modulation of MutS and MutL function in mismatch repair".  
**Acharya, S.**, P. Brooks and R. Fishel **Poster**
- Keystone Symposia on Molecular Mechanisms of DNA Replication and Recombination, Snowbird, Utah, 2002  
"Role of MutS and MutL in mismatch repair-signaling DNA damage".  
**Acharya, S.** and R. Fishel **Poster**
- Keystone Symposia on Molecular Mechanisms of DNA Replication and Recombination, Snowbird, Utah, 2002  
"Characterization of hMSH4-hMSH5 binding and disassociation from Holliday Junctions".  
Snowden, T., M. Berardini, **S. Acharya**, C. Butz and R. Fishel. **Poster**

- American Society for Microbiology Conference on DNA Repair and Mutagenesis, 1999  
“The Role of MutL in signaling DNA mismatch repair”  
**Acharya, S.**, S. Gradia, P. Brooks and R. Fishel **Poster**
- Keystone Symposia on Molecular and Cellular Biology 1999  
“The *Escherichia coli* MutL functions as an ATPase Activator Protein (AAP) for MutS”  
**Acharya, S.**, S. Gradia, P. Brooks and R. Fishel. **Invited Talk**
- Cambridge Symposia on Unstable Triplets, Microsatellites, and Human Disease 1997  
“ Binding Specificities of hMSH2/hMSH3 and hMSH2/hMSH6 Complexes to DNA Mispairs”  
Wilson, T., **S. Acharya**, S. Gradia, S. Guerrette and R. Fishel **Poster**
- International Union of Biochemistry and Molecular Biology (IUBMB) Congress 1994  
“Characterization of a co-associated pairing and DNA ligase activity from rat testes”  
**Acharya, S.**, N. R. Chaudhury and M. R. S. Rao **Poster**
- Society for Biological Chemists (SBC) Conference 1992  
“Partial Purification and Preliminary characterization of a strand-transfer protein (recombinase) from rat testes”.  
**Acharya, S.** and M.R.S. Rao **Poster**
- Mahabaleshwar Seminars on Modern Biology on “Genetic Recombination”-1989, India.