

CURRICULUM VITAE

Name: Sagar Sengupta

Date of Birth: 23rd June, 1968

Gender: Male

Present Address:

Sagar Sengupta
Staff Scientist
National Institute of Immunology
Aruna Asaf Ali Marg
New Delhi 110067, India
Phone: 91-11- 26703786
Fax: 91-11-2616 2125
Email: sagar@nii.res.in

Education/Training:

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Calcutta University, Calcutta, India	B. Sc.	1985-1988	Chemistry
Calcutta University, Calcutta, India	M. Sc.	1988-1991	Biochemistry
Indian Institute of Science, Bangalore, India	Ph.D.	1991-1997	Microbiology, Cell Biology
IGBMC, Strasbourg, France	Post-doc	1997-2001	Cancer Biology
NCI, NIH, USA	Post-doc	2001-2004	Cancer Biology

Professional Experience:

September 2004- September 2008 Staff Scientist IV, National Institute of Immunology, Aruna Asaf Ali Marg,
New Delhi, India

September 2008- till date Staff Scientist V, National Institute of Immunology, Aruna Asaf Ali Marg,
New Delhi, India

Honors:

2011 Awarded National Bioscience award for Career Development
2011 Elected as a member of Guha Research Conference
2011-till date Editorial Board member of IRSN Cell Biology
2011-till date Member of Indian Association of Cancer Research
2010-till date Editorial Board member of Genome Integrity
2010-till date Associate Editor of International Journal of Genomics and Proteomics
2004 Nominated Aspen Cancer Conference Fellow, 19th Aspen Cancer Conference, held between
July 24th – July 27th, 2004, Aspen, Colorado, USA.

2003-2004	Exceptional stipend increase award by Center for Cancer Research, National Cancer Institute, USA.
2003	Outstanding oral presentation award at 2003 NCI Center for Cancer Research and Fellows and Young Investigators retreat held between February 12 th -14 th , 2003, Ocean City, Maryland, USA.
1997	Best thesis award in Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, India for the year 1996.
1993-1996	Awarded a Senior Research Fellowship by Council of Scientific and Industrial Research, India during Ph. D. in Indian Institute of Science, Bangalore, India.
1991-1993	Awarded a Junior Research Fellowship by Council of Scientific and Industrial Research, India during Ph. D. in Indian Institute of Science, Bangalore, India.
1991	Silver medalist in M. Sc. from Biochemistry Department, Calcutta University, India.

Invited presentations:

1. Invited speaker to the National Cancer Institute, National Institutes of Health, USA on 26th March, 2012.
 2. Attended and presented a poster in the Keystone Symposium "Mitochondrial dynamics and functions", held at Baniff, Alberta, Canada, March 19th– 24th, 2012.
 3. Invited speaker in 37th Annual Conference of Environmental Society of India, held in KIIT University, Bhubaneswar, India 24th – 26th February, 2012.
 4. Invited speaker in International Workshop on Ataxia Telangiectasia (ATW2012), held in New Delhi, India, February 8th-11th, 2012.
 5. Invited speaker in Life Science Symposium (LSS-2011) on Advances in molecular and cell biology of stress response, held in Bhabha Atomic Research Centre, Mumbai, India, October 12th-14th, 2011.
 6. Invited speaker in Aging and Age Related Disorders, held in National Institute of Immunology, New Delhi, India, March 3rd-4th, 2011.
 7. Invited speaker in 30th Annual meeting of Indian Association of Cancer Research, held in Indian Institute of Chemical Biology, Kolkata, India, February 6th-9th February, 2011.
 8. Invited speaker in 79th meeting of Society of Biological Chemists, India, held in Indian Institute of Science, Bangalore, India, December 13th-15th, 2010.
 9. Attended and presented a poster in the Maintenance of Genome Stability Conference, held at Jolly Beach Resort, Antigua, March 8th-11th, 2010.
 10. Attended and presented a poster in the Young Investigators' Meeting, held at Estuary Island, Poovar, Karala, India, February 24th-28th, 2009.
 11. Invited speaker in 28th Annual meeting of Indian Association of Cancer Research, held in Indian Institute of Science, Bangalore, India, February 21st-24th, 2009.
 12. Invited speaker in International Symposium on Frontiers in Molecular Medicine, held in Jawaharlal Nehru University, New Delhi, India, February 13th-14th, 2009.
 13. Invited speaker in Eighth International Conference of Anticancer Research, held in Kos, Greece, October 17th-22nd, 2008.
 14. Invited speaker in International Symposium on Cancer Biology, held in National Institute of Immunology, New Delhi, India, November 14th-16th, 2007.
 15. Invited speaker in Satellite Symposium on Cancer Research, held in National Institute of Immunology, New Delhi, India, April 10th-11th, 2007.
 16. Invited speaker in Human Genomics and Public Health and the XXXI Annual Conference of Indian Society of Human Genetics -2006 organized by Jawaharlal Nehru University, New Delhi, India, 27th Feb - 1st March, 2006.
-

17. Invited speaker in Bloom Syndrome Workshop, held in National Institute of Health, Bethesda, Maryland, USA, April 7th- 8th, 2005.
18. Attended and presented a poster in 19th Aspen Cancer Conference, held in Aspen, Colorado, USA, July 24th-27th, 2004.
19. Attended and presented a poster in FASEB Summer Research Conference on Helicases: Structure, Function and Roles in Human Diseases, held in Vermont Academy, Vermont, USA June 28th-July 3rd, 2003.
20. Attended and presented a poster in the International Workshop on Werner Syndrome, held at Bethesda, Maryland, USA May 28th-31st, 2003.

Ongoing Research Support

1. Grant agency: Indo-French Centre for the Promotion of Advanced Research (IFCPAR) and Centre Franco-Indien pour la Promotion de la Recherche Avancee (CEFIPRA)
Role: PI
Title of the project and Reference number: Genome-wide recruitment profiling of BLM after DNA damage (IFC/4603-A/2011/1250)
Period of support: 01.11.2011 to 31.10.2014
Total amount of support: Rs. 82.89 lakhs
2. Grant agency: Department of Science and Technology (DST), India
Role: PI
Title of the project and Reference number: Investigating the functions of Rothmund-Thomson Syndrome protein, RECQL4 helicase and p53 in the mitochondria (SR/SO/BB-08/2010)
Period of support: 19.11.2010 to 18.11.2013
Total amount of support: Rs. 37.08 lakhs
3. Grant agency: Department of Biotechnology (DBT), India
Role: PI
Title of the project and Reference number: Tumor Suppressor BLM helicase mediated regulation of expression and function of oncogene during neoplastic transformation (BT/PR11258/BRB/10/645/2008)
Period of support: 26.03.2010 to 25.03.2013
Total amount of support: Rs. 59.32 lakhs

Completed Research Support:

1. Grant agency: Department of Biotechnology (DBT), India
Role: PI
Title of the project and Reference number: Determining the role of BLM helicase during signal transduction in humans (BT/PR5936/BRB/10/408/2005)
Period of support: 23.01.2006 to 22.01.2009
Total amount of support: Rs. 32.046 lakhs
 2. Grant agency: Department of Science and Technology (DST), India
Role: PI
Title of the project and Reference number: Investigating the role of BLM helicase and signal transducer, 53BP1, during homologous recombination in human (SR/SO/HS-24/2005)
Period of support: 15.11.2006 to 14.11.2009
-

Total amount of support: Rs. 21.240 lakhs

3. Grant agency: Department of Biotechnology (DBT), India

Role: Co-PI

Title of the project and Reference number: Establishment of an advanced microscopy cum flow cytometry unit (BT/PR9014/INF/22/68/2007)

Period of support: 03.09.2007 to 02.09.2010

Total amount of support: Rs. 480 lakhs

4. Grant agency: National Institutes of Health (NIH), USA

Role: PI

Title of the project and Reference number: Regulatory mechanisms for BLM helicase (1 R01 TW007302-01A1)

Period of support: 01.08.2006 to 31.05.2011

Total amount of support: \$ 250,000

5. Grant agency: Department of Biotechnology (DBT), India

Role: PI

Title of the project and Reference number: Determining the role of BLM helicase in DNA damage signal recognition and transduction due to double strand breaks in human (BT/PR9598/Med/30/33/2007)

Period of support: 18.09.2008 to 17.09.2011

Total amount of support: Rs. 48.09 lakhs

6. Grant agency: Council of Scientific and Industrial Research (CSIR), India

Role: PI

Title of the project and Reference number: Investigating how BLM helicase regulates RAD54 functions during recombination in human [37(1348)/08/EMR-II]

Period of support: 18.12.2008 to 17.12.2011

Total amount of support: Rs. 19.26 lakhs

Manuscript Reviewer for:

Journal of Cell Biology
Genes and Development
Journal of Cell Science
Journal of Molecular Biology
EMBO Reports
Oncogene
FEBS Letter
Nucleic Acid Research
Carcinogenesis
Molecular Cancer Research
Genome Integrity
Journal of Nucleic Acids

Grant Review for:

Council of Scientific and Industrial Research, India

Department of Biotechnology, India
Department of Science and Technology, India

Teaching:

Molecular Biology: Genes & Proteins (2005 - 2010)

Number of students obtained PhD: 3

Number of PhD students being mentored at present: 4

Bibliography

A. Peer-Reviewed Original Research Articles

1. De S, Kumari J, Mudgal R, Modi P, Gupta S, Futami K, Goto H, Lindor NM, Furuichi Y, Mohanty D, **Sengupta S** (2012) RECQL4 is essential for the transport of p53 to mitochondria in normal human cells in the absence of exogenous stress. *J Cell Sci* (In Press).
 2. Kaur S*, Modi P*, Srivastava V*, Mudgal R*, Tikoo S, Arora P, Mohanty D, **Sengupta S** (2010) Chk1-dependent constitutive phosphorylation of BLM helicase at Serine 646 decreases after DNA damage. *Mol Cancer Res.* 8:1234-1247 (* signifies equal first authors).
 3. Larrieu D, Ythier D, Binet R, Brambilla C, Brambilla E, **Sengupta S**, Pedeux R (2009) ING2 controls DNA replication forks progression to maintain genome stability. *EMBO Rep.* 10:1168-1174.
 4. Mehta S, Miklos I, Sipiczki M, **Sengupta S**, Sharma N (2009) The Med8 mediator subunit interacts with the Rpb4 subunit of RNA polymerase II and Ace2 transcriptional activator in *Schizosaccharomyces pombe*. *FEBS Lett.* 583: 3115-3120.
 5. Srivastava V*, Modi P*, Tripathi V, Mudgal R, De S, **Sengupta S** (2009) BLM helicase stimulates the ATPase and chromatin remodeling activities of RAD54. *J Cell Sci* 122: 3093-3103 (* signifies equal first authors).
 6. Tripathi V, Kaur S, **Sengupta S** (2008) Phosphorylation-dependent interactions of BLM and 53BP1 are required for their anti-recombinogenic roles during homologous recombination. *Carcinogenesis* 29:52-61.
 7. Tripathi V, Nagarjuna T, **Sengupta S** (2007) BLM helicase-dependent and independent roles of 53BP1 during replication stress mediated homologous recombination. *J. Cell Biol.* 178: 9-14.
 8. Pedeux R, **Sengupta S**, Shen JC, Demidov ON, Saito S, Onogi H, Kumamoto K, Wincovitch S, Garfield SH, McMenamin M, Nagashima M, Grossman SR, Appella E, Harris CC (2005) ING2 regulates the onset of replicative senescence by induction of p300-dependent p53 acetylation. *Mol Cell Biol.* 25:6639-6648.
 9. Zhang R, **Sengupta S**, Yang Q, Linke SP, Yanaihara N, Bradsher J, Blais V, McGowan CH, Harris CC (2005) BLM helicase facilitates Mus81 endonuclease activity in human cells. *Cancer Res.* 65:2526-2531.
 10. **Sengupta S**, Shimamoto A, Koshiji M, Pedeux R, Rusin M, Spillare EA, Shen JC, Huang LE, Lindor NM, Furuichi Y, Harris CC (2005) Tumor suppressor p53 represses transcription of RECQL4 helicase. *Oncogene* 24:1738-1748.
 11. **Sengupta S**, Robles AI, Linke SP, Sinogeeva NI, Zhang R, Pedeux R, Ward IM, Celeste A, Nussenzweig A, Chen J, Halazonetis TD, Harris CC (2004) Functional interaction between BLM helicase and 53BP1 in a Chk1-mediated pathway during S-phase arrest. *J. Cell Biol.* 166: 801-813.
 12. Yang Q, Zhang R, Wang XW, Linke SP, **Sengupta S**, Hickson ID, Pedrazzi G, Perrera C, Stagljar I, Littman SJ, Modrich P, Harris CC (2004) The mismatch repair heterodimer, hMSH2/6, regulates BLM helicase. *Oncogene* 23:3749-3756.
-

13. Hussain SP, Amstad P, He P, Robles A, Lupold S, Kaneko I, Ichimiya M, **Sengupta S**, Mechanic L, Okamura S, Hofseth LJ, Moake M, Nagashima M, Forrester KS, Harris CC (2004) p53-induced upregulation of MnSOD and GPx, but not Catalase increases oxidative stress and apoptosis. *Cancer Res.* 64:2350-2356.
14. Linke SP, **Sengupta S**, Khabie N, Jeffries BA, Buchhop S, Miska S, Henning W, Pedoux P, Wang XW, Hofseth LJ, Yang Q, Garfield SH, Stürzbecher HW, Harris CC (2003) p53 interacts with hRAD51 and hRAD54, and directly modulates homologous recombination. *Cancer Res.* 63: 2596-2605.
15. **Sengupta S**, Linke SP, Pedoux R, Yang Q, Farnsworth J, Garfield SH, Valerie K, Shay JW, Ellis NA, Wasylyk B, Harris CC (2003) BLM helicase-dependent transport of p53 to sites of stalled DNA replication forks modulates homologous recombination. *EMBO J.* 22: 1210-1222.
16. Ganguli G, Back J, **Sengupta S**, Wasylyk B (2002) The p53 tumour suppressor inhibits glucocorticoid receptor induced proliferation of erythroid progenitors. *EMBO Rep.* 6: 569-574.
17. **Sengupta S**, Wasylyk B (2001) Ligand dependent interaction of the glucocorticoid receptor with p53 enhances their degradation by Hdm2. *Genes Dev.* 15: 2367-2380.
18. **Sengupta S**, Vonesch JL, Waltzinger C, Zheng H, Wasylyk B (2000) Negative cross-talk between p53 and the glucocorticoid receptor and its role in neuroblastoma cells. *EMBO J.* 19:6051-6064.
19. **Sengupta S**, Ralhan R, Wasylyk B (2000) Tumour regression in a ligand inducible manner mediated by a chimeric tumour suppressor derived from p53. *Oncogene* 19: 337-350.
20. **Sengupta S**, Shaila MS, Rao GR (1997) A novel phosphorylation mediated regulation of nitrite reductase in *Candida utilis*. *FEBS Lett.* 416: 51-56.
21. **Sengupta S**, Shaila MS, Rao GR (1997) *In vitro* and *in vivo* regulation of assimilatory nitrite reductase from *Candida utilis*. *Arch Microbiol.* 168: 215-224.
22. **Sengupta S**, Shaila MS, Rao GR (1996) Purification and characterisation of assimilatory nitrite reductase from *Candida utilis*. *Biochem J.* 317: 147-155.

B. Peer Reviewed Review Articles

1. Tikoo S, **Sengupta S** (2010). Time to Bloom. *Genome Integr.* 1:14.
2. **Sengupta S**, Harris CC (2005). p53: traffic cop at the crossroads of DNA repair and recombination. *Nature Rev. Mol. Cell Biol.* 6:44-55.
3. **Sengupta S**, Wasylyk B (2004) Physiological and pathological consequences of the interactions of the p53 tumor suppressor with the glucocorticoid, androgen and estrogen receptors. *Ann NY Acad Sci.* 1024: 54-71.

C. Conference Proceedings

1. Tripathi V, Kaur S, Nagarjuna T, **Sengupta S** (2008). Role of BLM and 53BP1 during homologous recombination. *Anticancer Res.* 28: 3481.
-

2. **Sengupta S**, Robles A, Linke S; Sinogeeva N; Zhang R, Pedoux R, Ward I, Celeste A, Nussenweig A, Chen J, Halazonetis T, Harris C (2004). BLM helicase and 53BP1 cooperate in the replication stress pathway. *Toxicol Pathol.*, 32: 754.
3. Hussain SP, Amstad P, He P, Robles A, Lupold S, **Sengupta S**, Ichimiya M, Okamura S, Moake M, Forrester K, Harris CC (2004). P53-mediated oxidative stress and apoptosis. *Toxicol Pathol.*, 32: 163-164.

D. Patent

RECQL4/RECQL4 variant-p53 adduct for altered mitochondrial function in Rothmund –Thomson Syndrome. (Filed in India 2321/DEL/2009, PCT application number PCT/IB2010/002834, European phase EP10793297.2, US National Phase Application Serial No. 13/318,667)
