

Curriculum Vitae

Name : **Professor. SAMIR K. BRAHMACHARI**

Date of Birth : 1st January 1952

Present Position : Secretary, Department of Scientific and Industrial Research, GOI & Director General, Council of Scientific and Industrial Research. Anusandhan Bhawan, 2, Rafi Ahmed Kidwai Marg, New Delhi-110001 INDIA

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Academic Record

<u>Degree</u>	<u>Subject</u>	<u>Year</u>	<u>University</u>
Ph.D.	Molecular Biophysics	1978	Indian Institute of Science, Bangalore
M.Sc.	Pure Chemistry (Physical Chemistry Specialisation)	1973-74	University of Calcutta
B.Sc.	Chemistry (Hons.)	1971-72	University of Calcutta

Professional Appointments

<u>Positions Held</u>	<u>Period</u>	<u>Name of Organization</u>
Secretary, DSIR & Director General, CSIR	November 2007- Present	Secretary, Department of Scientific and Industrial Research, Govt. of India. & Director General, Council of Scientific and Industrial Research
Director	11 th August 1997-November 2007	Institute of Genomics & Integrative Biology (CSIR), Delhi
Professor	June 1997 – August 2001	Molecular Biophysics Unit, Indian Institute of Science, Bangalore
Associate Professor	April 1992-June1997	Molecular Biophysics Unit, Indian Institute of Science, Bangalore
Visiting Professor	May-July 1997	Max. Planck Institute of Biophysical Chemistry, Goettingen, Germany
Associated Faculty	April 1989-March 1995	Centre for Genetic Engineering, Indian Institute of Science, Bangalore.
Asst. Professor	April 1986 - March 1992	Molecular Biophysics Unit, Indian Institute of Science, Bangalore
Lecturer	April 1981 - March 1986	Molecular Biophysics Unit, Indian Institute of Science, Bangalore
Research Associate	December 1979-March 1981	Molecular Biophysics Unit, Indian Institute of Science, Bangalore
Visiting Scientist	November 1979	Dept of Biochemistry, Memorial University of Newfoundland, St. Jones, Newfoundland, Canada
Post-Doctoral	September 1978-October 1979	French Govt. fellowship Institute, de Recherche en Biologie Moleculaire CNRS, Univ. of Paris, Paris VII
Adjunct Professor	June 2003-Present	Bioinformatics Centre University of Pune, Pune
Visiting Professor	January 1998-Present	B. R. Ambedkar Centre for Biomedical Research, University of Delhi, Delhi

Awards and Honours

<u>Name of Award</u>	<u>Conferring Agency</u>	<u>Year</u>
• National Science Talent Search Scholarship	NCERT, INDIA)	1968
• Young scientist medal	Indian National Science Academy	1979
• Kani medal	National Cancer Research Centre, Tokyo, Japan	1981
• Cama Memorial Award	Society of Biological Chemists, India	1990
• Shanti Swarup Bhatnagar Award in Biological Sciences	Council of Scientific & Industrial Research, India	1990
• C. R. Krishnamurthy Oration Award	Society of Biological Chemists (India)	1998
• FICCI Award 1998-99 in recognition of individual initiative in Life Sciences including agriculture	Federation of Indian Chambers of Commerce and Industry	1999
• Millennium Medal	Indian Science Congress	2000
• Ranbaxy Research Award for The Year 2001 in the field of "Medical Sciences – Medical Research"	Ranbaxy Science Foundation	2002
• Goyal Prize 2001; Life Sciences.	Kurukshetra University	2003
• B. K. Bachhawat Oration Lecture Award	JNU	2003
• C. R. Krishnamurthy Oration Award	CDRI	2003
• Prof. P.K. Bose Memorial Award	Indian Chemical Society	2004
• Dr. B.R. Ambedkar Centenary Award for excellence in biomedical research	Indian Council of Medical Research	2005
• H. K. Firodia Awards For Excellence In Science and Technology	H.K. Firodia Memorial Foundation	2007
• Dhirubhai Ambani Oration Award		2007
• Padma Bhushan Dr. R.A.Mashelkar Medal	Asian Paints	2007
• Chemcon Distinguished Speaker Award		2007
• 2005 VASVIK Award for Biological S&T	Vividhlaxi Audyogik Samshodhan Vikas Kendra	2008
• Prof. M.V. Pylee Lifetime Achievement Award		2008
• 6 th Biospectrum person of the year-2008	Biospectrum	2008
• Distinguished Alumni IISc	IISc Alumni Association	2008
• SS Bhatnagar Memorial Award and Gold Medal	Indian Science Congress	2009

• The Jagadis Chandra Bose Medal (2007)	INSA	2009
• 2008 Shri Om Prakash Bhasin Award for S&T (Biotechnology)	Shri O. P. B.Foundation for S&T	2009
• D.Sc. (Honoris causa)	Vidyasagar University, West Bengal	2009
• Nayadumma Awards 2010		2010
• D.Sc. (Honoris causa)	Kalyani University	2010

Membership/Fellowships to Academies and Scientific Bodies

• Elected member	Guha Research Conference (India)	1986
• Fellowship of the Indian Academy of Sciences	Indian Academy of Sciences	1991
• Elected member	Human Genome Organization (HUGO)	1991
• Fellowship of the Indian National Science Academy	Indian National Science Academy	1995
• Elected Council Member Biochemistry and Molecular Biology	Federation of Asian & Oceanic	1995
• Fellowship of the National Academy of Sciences, Allahabad	National Academy of Sciences	2000
• Elected Council Member, HUGO	Human Genome Organisation (HUGO)	2004
• Fellow of Biotech Research Society of India (BRSI)	Biotech Research Society of India (BRSI), RRL, Trivandrum	2005
• Fellow of Indian National Academy of Engineering	Indian National Academy of Engineering, New Delhi	2010

Membership of Professional Bodies, Organization of Conferences, etc.

National Responsibilities

1. Organizing Secretary, International symposium on Biomolecular Structure and Interactions, Dec 1984.
2. Invited member, "Advisory Committee to Curriculum Development Centre for Postgraduate Education in Biophysics". India 1987-1988.
3. General Secretary, Society of Biological Chemists, India, 1987-89, 1993-95.
4. Executive committee member, Society of Biological Chemists, India, 1987.
5. Convenor, INDO-SOVIET Workshop on "DNA Protein Interaction & Crosslinking" Bangalore, March 1990.
6. Member, Task Force on Medical Biotechnology, Dept. of Biotechnology, Government of India. 1990-94.
7. Member, Editorial Board, Journal of Biosciences 1991-97.
8. Member, Chemical Sciences and Technology Research Committee, CSIR (India) 1993-98.
9. Convenor, Review meeting on "Trends in DNA Structure-Function and Genome Organization", Bangalore, Jan 1993.
10. Member, Task Force on Human Genetics, Dept. of Biotechnology, Government of India. 1994.

11. Member, National Organizing Committee, XVI IUBMB Congress, New Delhi, September 1994.
12. Member, National Organizing Committee, Third Asian Conference on Transcription, Bangalore, September 1994.
13. Member, National Bioethics Committee, Ministry of Science & Technology, Department of Biotechnology, w.e.f. November 1999- 15 November, 2006.
14. Member, Animal Ethics Committee, Delhi University South Campus.
15. Member, Management Council, Institute of Microbial Technology, Chandigarh.
16. Member, Research Council, National Institute of Science, Technology and Development Studies, New Delhi.
17. Member Academic Committee, National Institute of Immunology, New Delhi.
18. Member Advisory Committee of the Biotechnology Teaching Programme, Ambedkar Centre for Biomedical Research, Delhi.
19. Member, Society, Governing Body, and Finance Committee, National Brain Research Centre, New Delhi.
20. Member, Board of Governors, National Institute of Pharmaceutical Education & Research, Punjab.
21. Member, Sectional Committee-IX of Indian National Science Academy. - INSA Medal for Young Scientists, New Delhi.
22. Member, Performance Appraisal Board, Council of Scientific & Industrial Research, New Delhi.
23. Member, Advisory Committee, CSIR Young Scientists Award on Biological Sciences for the year 2000, New Delhi.
24. Chairman, Research Advisory Committee, National Bureau of Animal Genetic Resources, Karnal (Haryana).
25. Member, Research Council, Centre for Cellular and Molecular Biology, Hyderabad, 2001 - 2007
26. Member, Research Council, Central Drug Research Institute, Lucknow, 2004-2007.
27. Visitor's nominee, Selection committee for teaching post, Centre for Molecular Medicine, Jawaharlal Nehru University, New Delhi.
28. Member, Governing body and Society, Council of Scientific & Industrial Research for a period of three years, 2001-2004.
29. Member, Recombinant Drug advisory Panel, Ministry of Health and Family welfare, Govt. of India.
30. Member, Task Force Madhya Pradesh Expert Committee for Life Sciences.
31. Member, Maharashtra Biotech Commission.
32. Member, Kelkar high power Committee of CSIR.
33. Member, Task Force Himachal Pradesh.
34. Area Coordinator (Life Sciences) Integrated Long Term Programme (ILTP), Department of Science and Technology, New Delhi.
35. Appointed Chairman of Project Advisory Committee for International Programmes in Life Sciences & Biotechnology (PAC-LSBT), Department of Science & Technology, Govt. of India, w.e.f. 25th January, 2005.
36. Chairman, Working Group on Bioinformatics Research and Development, Ministry of Communication and Information Technology (DIT), Govt. of India, 7th October 2005- Present.
37. Member, Medical Biotechnology Development Board, Ministry of S&T, Department of Biotechnology, India w.e.f. 15th July, 2005.
38. Member, Steering Committee on Technology Financing in India – A National Initiative, Department of Science & Technology, India w.e.f. July 2004.
39. Member, CSIR Working Group for the formulation of XI th Five Year Plan w.e.f. December, 2005.

40. Chairman, CSIR Committee for "Optimising the CSIR support staff in various streams in the global context".
41. Member, CSIR Change Team for the implementation of recommendation of Kelkar Committee.
42. Member, Indian Council of medical Research (ICMR) for preparing the XI th Five Year Plan document.
43. Member, Advisory Committee of Special Centre for Molecular Medicine, Jawaharlal Nehru University, New Delhi, April 2006.
44. Member, Committees for preparing plan and budget of 'Biology & Biotechnology' and 'Drug, Pharma & Healthcare' Sectors of CSIR, India
45. Guest of Honour, Key note address, 5th Hi Tech, Pune Maharashtra 2008, 19th June 2008.
46. Chairman, Plenary Session at Workshop on China-India-US Science Policy at NIAS, Bangalore, 9th July, 2008.
47. Chairman, National Organization Committee, Human Genome Meeting 2008, Hyderabad.
48. Member, Advisory Committee, International Conference on Nanoscience, Cochin University of S&T, Cochin, January 3-6, 2009.
49. Patron: 34th Annual Meeting, of the Environment and Mutagenic Society of India, and International Symposium, Magadh University, Bodhgaya, 17-19 March 2009.

International Responsibilities

1. Council Member, Federation of Asian & Oceanic Biochemistry and Molecular Biology, 1995 till date.
2. Advisory Board Member, Journal of Biochemistry, Molecular Biology & Biophysics. The official journal of FAOBMB.
3. Chairman of the FAOBMB Fellowship Committee for the 17th FAOBMB Symposium "Genomics and Health for the 21st Century" held at Thailand, November 2004.
4. Chairman of the FAOBMB Fellowship Committee for the 18th FAOBMB Symposium "Genomics and Proteomics in Health and Agriculture" held at Lahore, November 2005.
5. Member, Human Genome Organization 1991.
6. Elected Member of the Human Genome Organisation (HUGO) Council for the years 2004 to 2007.
7. Member, Advisory group on "Biotechnology & Human Rights" to H. R. High Commission, Geneva.
8. Member of India-European Commission S&T Steering Committee responsible for Genomics & Biotechnology for Health.
9. Member, Planning Group of the Human Variome Project coordinated by Professor Richard G. H. Cotton AM, Director: Genomic Disorders Research Centre, Melbourne, Australia, 2006.
10. Appointed an independent Director on the Board of the India Pharma Fund Ltd., an open-ended multi-class investment company incorporated in Mauritius in 2005.
11. Coordinator of the Indo-EU workshop on "Functional Genomics & Biotechnology for Health", organized by DST, India at Delhi on 27th and 28th April, 2005.
12. Coordinator of the "Indo-Brazil-South Africa (IBSA) Trilateral Workshop on "Functional Genomics, Life Science, GM Food and Agriculture", organized by DST, India at Delhi on 18th -19th July, 2005.
13. Coordinator of the "Indo-Taiwan Joint Workshop on Functional Genomics" organized by DST, India at Delhi on 20th-21st October, 2005.
14. Organized the "2nd CSIR-NSFC Workshop on Genome Informatics" at Delhi from 22nd to 25th February, 2006.
15. Invited by the Council of Human Genome Organisation to host the Human Genome Meeting in India in 2008 and to Chair the National Organising Committee .

16. Regional Editor for South Asian Countries for the Journal Genomic Medicine, 2006 onwards.
17. Advisory Board member for Archon-X prize for genomics, X-Prize foundation, USA.
18. Member of the international Advisory Panel on Biotechnology Development (BIO-IAP) of Malaysia for the period 2009-2011.
19. International Panel Reviewer for the Malaysian Cohort project of the Ministry of Science, Technology and Innovation (MOSTI), Malaysia, 2010
20. Member of the Board of Advisors of Journal of Biomolecular Structure and Dynamics (JBSD), 2010

Member of Important Delegations (Govt. of India/CSIR)

1. Member, Indian delegation to attend 2nd Indo–US Round Table Dialogue meeting in Washington DC, September 2000.
2. Member, Indian delegation to Moscow to explore the possibility of bilateral co-operation with Russian Institutes in the area of Biomedical Research, organised by Department of Science & Technology, 6-12 October, 2002.
3. Member, Indian delegation to participate in the Indo-South African Workshop on advanced computing, organised by Department of Science & Technology at Pretoria, S. Africa, 28-29 October, 2002.
4. Member, Indian delegation to London to participate in the `India Day' celebrations on 11th December 2002 organised by the Royal Society, London.
5. Member, Indian delegation to Brussels to participate in the 1st Meeting of the India-EC S&T Steering Committee during March 3rd to 5th, 2004.
6. Member, Indian delegation to Russia for participation in the 12th Session of ILTP Joint Council Meeting in St. Petersburg and Joint Committee Meeting of the Russian-Indian Centre for Ayurvedic Research in Moscow from September 30 to October 4, 2004.
7. Member of the Indian delegation to Israel to attend the Workshop on “Promoting and Facilitating Innovation driven new ventures”, held from 29th May to 3rd June, 2005 at Technion – Israel Institute of Technology, Haifa, organised by TIFAC, DST.
8. Lead a group of Indian scientists to attend the Taiwan-India Joint Symposium on Functional Genomics on 3rd-4th March, 2006 at Taipei, Taiwan.
9. Member, Indian delegation to Brussels to participate in the 3rd Meeting of the India-EC S&T Steering Committee during November 16th-17th, 2006.

Research Achievements and Present Research Interests

Major Scientific Achievements

Prof. Brahmachari has demonstrated the structural flexibility of DNA and the role of repetitive sequences in DNA transactions much before the discovery of repeats association with genetic disorders. His work on the structural flexibility of telomeric repeat sequences is one of his well cited contributions. He has made major contributions in molecular analysis of genetic disorders associated with trinucleotide amplification and repetitive sequence instability. Using a combination of structural biology, computational genomics and population based polymorphism scanning he and his group have provided a novel structural frame work for understanding the etiology of several neurological disorders. He was first to establish a close clinical network to address genetics of complex disorders and demonstrated association of two genes to Schizophrenia and Bipolar Disorder (synaptogyrin 1 and MLC1 gene) and identified several SNPs and other markers associated to various neurological disorders. Taking advantage of genetic diversity of Indian population and core expertise in structural biology and computation, he has pioneered functional genomics initiative in India and led the Indian Genome Variation Consortium which developed a database of over 1000 genes related to disease and drug response, exploring human genome variation in multi-ethnic, multi-lingual populations of India to develop a national resource: the genetic profile of the people of India.

Prof. Brahmachari and coworkers have carried out extensive computational analysis of the repetitive sequences in the genome and were one of the first to propose functional role of such sequence. He and his associates have developed novel and unique tools for genome annotation and identification of functional signature for hypothetical proteins in the genome through comparative genomics approach. He and his group has developed novel software for genome analysis and identified several novel non-active site targets for bacterial pathogen under a national network project in *In Silico* Biology for drug target development led by him. He is also the first to market novel globally competitive Bioinformatics software products from CSIR. His group has also developed tools for System Biology Platform. Recent finding of Prof. Brahmachari and his associates that Human miRNA can target critical genes in HIV, thus preventing HIV proliferation has received wide international recognition. (Petit-Zeeman, S. Nature Rev. Drug Discovery, 2006, 5.5). His group has developed computational model for gene-gene interaction network for complex disorders like Schizophrenia.

Prof. Brahmachari has also been involved in issues relating to Human Genome research ethics and Human Rights. As a member of the steering committee of the International Human Rights Commission he has contributed to the formulation of the draft guidelines in terms of benefit sharing by the populations that are the part of the research endeavor as resources of genetic material and addressed issues of unethical exploitation of genetic resources of the Third world. His contribution in India in promoting genomics research through thrust area development in granting agencies, lectures, courses and human-resource training is very significant. Dr. Brahmachari has contributed significantly in promoting industry-academia interactions through novel program of knowledge partnerships in genomics and bioinformatics.

Knowledge Alliance

Prof. Brahmachari has positioned IGIB as Institution of Knowledge generation and Development and established alliances with industries who are expert in production, marketing and wealth generation. GENOMED Alliance and TCGA project are outcomes of such strategy.

Prof. Brahmachari was first to conceptualize and implement **Genomed**, a first-of-its-kind alliance in India between a government Institute and a pharmaceutical company - Nicholas Piramal India Limited & a CSIR lab - Centre for Biochemical Technology (CBT) now IGIB. This knowledge alliance was dedicated to the study and advancement of genomics, pharmacogenomics and bioinformatics. This model allowed knowledge generation and absorption by industry simultaneously and this was distinctly different from contractual research or technology transfer. The first predictive diagnostic medicine for drug nonresponders of Asthma has been developed. The project has so far filed 2 international patents.

Prof. Brahmachari has also conceptualized creation of TCGA, "**The Centre for Genomic Application**". It is a collaborative R&D project between The Chatterjee Group and IGIB/CSIR/DST that is used as a

shared resource for all the research centres in the country; be it public or private. TCGA is a trendsetter in this direction, where a world class high throughput facility/infrastructure required to harness the knowledge coming out Human Genome research is established jointly by industry and the Institute.

In summary, Prof. Brahmachari has shown exemplary scientific leadership and has made contribution in the area of Functional Genomics with special emphasis on molecular genetics of neurological and psychiatric disorders and functional Genomics in silico. Prof. Brahmachari's scientific contribution has positioned India on the world genome research map (Nature, Vol. 436; pp 480-483 and pp 492-495; 28th July, 2005).

Teaching Experience

- 1) Involved in courses in Bio-molecular Structure; Biophysical Chemistry, DNA Structure-Function and Expression for a large number of Ph.D. students at Indian Institute of Science for 18 years.
- 2) Delivered over 200 lectures at various institutions, universities and colleges in the country on Human Genome Project and Genome Analysis Technology.
- 3) Has delivered lectures for the Integrated Ph.D students of B. R. Ambedkar Centre for Biomedical Research, University of Delhi, Delhi from 1998 onwards.

Dr. Brahmachari's contribution in Institutional Transformation

Relatively unknown Centre for Biochemical Technology of CSIR underwent major transformation over the last 10 years to emerge as a leading institute of Genomics & Integrative Biology in the country. The scientific production and quality grew from 7 publication (Avg. IF 1.01) in 1996 to 75 (Avg. IF 3.30) in 2006 and expected to reach higher in 2007. It also acquired an impressive portfolio of 67 foreign and national patents (and 176 pending patents). IGIB's patent portfolio has caused value realization and IP asset creations and has attracted foreign and national collaborations and project funding. The following are the salient achievements of CBT/IGIB during the last 10 years.

- 1998 - IGIB established largest clinical network in India
- 2000 - First Knowledge Alliance '*GenoMed*' with NPIL
- 2002 - G.N. Ramachandran Knowledge Centre for Genome Informatics established through private funding to attract IT Professionals
- 2003 - First Bioinformatics Software of CSIR Commercialized
- 2004 - Largest Private – Public partnership TCGA "The Centre for Genomic Application" (co-shared facility) established
- 2005 - First Genomic marker for drug response discovered
- 2005 - Largest High Performance Computing facility (4.7 tera flops) established
- 2005 - India's highest number of co-authored (158) paper published
- 2005 - First Recombinant Growth Factor drug REGEN-D launched (Technology Award 2006)
- 2005 - HP Centre of Excellence in Bioinformatics in Asia.
- 2005 - IGIB among the World's best Bioinformatics Institutes for developing PML 2 protocol
- 2006 - First Bioincubator "Eclasion" being established
- 2005-06-2007 - IGIB attains highest number of paper, total IF, Patents and ECF per scientist
- 2007 - IGIB coordinated Indian Genome Variation project provided the Genetic landscape of people of India: A canvas for affordable predictive medicine development and for informed policy level decision for Adverse Drug Reaction and disease (like HIV, Malaria, Diabetes, CVD etc.) management
- 2007 - Initiated a novel programme on Open Source Drug Discovery platform for infectious diseases
- 2007 - Launched a programme on pharmacogenomics to keep affordable drugs in the market.

Visits Abroad

1979-1996

1. Participated in workshop on "Chromatin structure". Weizmann Institute of Sciences. Rehovot, Israel, March 1979.
2. Visiting Scientist to Dept. of Biochemistry, Memorial University of Newfoundland, St. Johns Newfoundland, Canada, Nov. 1979.
3. Participated in first AMBO meeting on "Future of Nucleic Acid Research" in Kyoto, Japan, Dec, 1981, and visited several laboratories in Japan during 26th Nov. to 22nd Dec, 1981.
4. Visitor, University of Ulm, West Germany, May 1985.
5. Participation and paper presentation at the IVth conversation in Biomolecular Stereodynamics, Albany, N.Y.USA, June 1985.
6. Visiting Scientist, Dept. of Human Genetics and Development, University of Columbia, N.Y. USA, June-Sept. 1985.
7. INDO-USSR ILTP exchange visit. Institute of Molecular Biology, USSR Academy of Sciences, Moscow, May 1988.
8. Symposium speaker, 6th Convention in Biomolecular Stereodynamics, Albany, N.Y., USA, June 1989.
9. Visitor, Dept. of Biochemistry, Oxford University, Oxford, UK, June 1989.
10. Visitor, Dept. of Biochemistry, Tufts University, Boston, USA. June 1989.
11. Invited, speaker, 2nd International symposium of Protein Structure Functions, University of Karachi, Pakistan, Dec 1989.
12. Participated and presented poster at the Gordon Research Conference on "Nuclear Proteins, Chromatin Structure and Gene Regulation" Tilton school, New Hampshire, USA, July 1990.
13. Visitor, Dept. of Biology, Massachusetts Institute of Technology, Cambridge, USA, July 1990.
14. Participated and presented paper at 10th International Biophysics Congress of IUPAB Vancouver, Canada, 29th July-3rd August 1990.
15. Visiting Scientist, Dept. of Molecular Biology, Stanford Research International, Stanford, California, USA, Aug 1990.
16. Invited speaker, International Symposium on "Synthetic Oligonucleotides: Problems and Frontiers of Practical Application", Shemyakin Institute, Moscow, June 1991.
17. INDO-USSR ILTP exchange visit. Institute of Molecular Biology, USSR Academy of Sciences, Moscow, July 1991.
18. Symposium speaker, 8th Conversation in Biomolecular Stereodynamics, Albany, N.Y., USA, June 1993.
19. Visitor, Dept. of Biophysics, University Paris Nord, Paris, France, June 1993 (Hosted by Prof. E. Taillandier).
20. Visitor, Dept of Biophysics, Museum National D'Histoire Naturelle, Paris, France, 1993 (Hosted by Prof. C. Helene).
21. Visitor, Dept. of Chemistry, New York University, New York University, New York, USA, 1993 (Hosted by Prof. N. R. Kallenbach).
22. Visitor, NIDDKD, National Institute of Health, Maryland, USA, 1993 (Hosted by Prof. H. T. Miles).
23. Visitor, Dept. of Molecular Biology, National Institute of Health, Maryland, USA, 1993 (Hosted by Dr. S. Adhya).
24. Visitor, Dept. of Chemistry, University of Rutgers, New Jersey, USA, 1993 (Hosted by Prof. Wilma Olson).

25. Visitor, Dept. of Biology, MIT, Cambridge, Boston, USA, 1993 (Hosted by Prof. A. Rich).
26. Visitor, Dept. of Human Genome Centre, Boston University, Cambridge, USA, 1993 (Hosted by Prof. Charles R. Cantor).
27. Visitor, NIG, Japan, 1996 (Hosted by Prof. T. Gojobori).
28. Visitor, Genome Science Laboratory, Riken, Japan 1996 (Hosted by Dr. Y. Hyashizaki).
29. Visitor, Banyu Tsukuba Research Institute, Tsukuba, Japan, 1996 (Hosted by Prof. Susumu Nishimura).
30. Visitor, Human Genome Centre, Tokyo, Japan, 1996 (Hosted by Prof. Yoshiyuki Sakaki).
31. Invited Speaker, Human Genome Treaty Symposium, Berlin, Germany, October 1996.
32. Visitor, Institute of Human Genetic, Berlin, Germany, October, 1996 (Hosted by Prof. Karl Sperling).
33. Visitor, Institute fur Kristallographie, Germany, October 1996 (Hosted by Prof. W. Saenger).
34. Visitor, Max-Planck Inst. fur Biophysical Chem, Germany, October 1996 (Hosted by Prof. T. M. Jovin).
35. Visitor, Max-Delbruck Centre for Molecular Medicine, Berlin, Germany October 1996 (Hosted by Dr. U. Heinmann).
36. Visitor, Genetique Medicale Et. Development, Marseille, France, October 1996 (Hosted by Prof. M.Fontes).

1997 - 2007

1. Senior visiting scientist, Max-Planck Inst. for Biophysical Chem. Goettingen, Germany, May-June 1997.
2. Attended the council meeting of the FAOBMB & the 8th FAOBMB Congress, Kuala Lumpur, Malaysia, November 1998.
3. Attended and delivered invited talk at the Indo-Israel Golden Jubilee Conference, Israel, December 1998-January 1999.
4. Attended the Council meeting of the FAOBMB, Delivered invited symposium lecture at 14th FAOBMB Symposium, University of Otago, Dunedin, New Zealand, November 1999.
5. Delivered invited lecture at Institute for Biomedical Research, University of Sydney, Sydney, December 1999.
6. Attended the International Colloquium entitled "Life Sciences, Ethics, Economy & Society" at University of Bordeaux-I, France, June 2000.
7. Attended 2nd Indo –US Round Table Dialogue meeting in Washington DC, September 2000.
8. Invited speaker at an International Symposium on "Ethics, Intellectual Property and Genomics" at UNESCO Headquarters, Paris, 30th January-1st February 2001.
9. Attended and delivered invited talk at the Working Group Meeting as a follow up of the symposium on "Ethics, Intellectual Property and Genomics" at UNESCO Headquarters, Paris, 13th –14th June 2001.
10. Attended and delivered invited talk at the Symposium on Bioethics in Austria 21st-23rd November 2001.
11. Attended and delivered invited talk at the Conference on Expert Group on Human Rights and Biotechnology at Geneva 23rd – 25th January 2002.
12. Invited Speaker for HGM 2002 workshop at Shanghai 14th – 17th April 2002.
13. Attended and delivered invited talk at the conference on "Bioscience Asia 2002" at Taiwan 20th – 23 rd May 2002.

14. Attended Indo-South African Workshop on advanced computing, organised by Department of Science & Technology at Pretoria, S. Africa, 28-29 October 2002.
15. Invited speaker during India Celebrations Day at Royal Society London, 11th Dec 2002
16. Participated in a Workshop organised by the University of Mauritius to help them in developing Bioinformatics and its application to Academics and graduate students and also to discuss and identify together with Academics niche research areas in the Bio-informatics field, 18th to 25th October 2003.
17. Participated in the 1st Meeting of India-EC Steering Committee at Brussels, Belgium from March 3rd to 5th, 2004.
18. Visited Japan at the invitation of Japan External Trade Organization (JETRO)'s Support Programme for Japan- India Business Matching in the Field of Biotechnology from March 21st to 27th, 2004 at delivered invited talk at JETRO.
19. Visited Russia as a member of the Indian delegation to Russia to participate in the 12th Session of ILTP Joint Council Meeting in St. Petersburg and Joint Committee Meeting of the Russian-Indian Centre for Ayurvedic Research in Moscow from September 30th to October 4th, 2004.
20. Visited Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland to develop collaborative project under the Indo-Swiss Collaboration Programme to identify promising areas in Life Sciences and for business development during October 5th to 7th, 2004.
21. Participated at the HUGO Council meeting at Toronto, Canada on 27th October, 2004.
22. Headed the Indian delegation participating in the Sino-Indian Workshop on Genome Informatics held at Hangzhou, China from October 27th to November 2nd, 2004.
23. Invited speaker at the HUGO Pacific Meeting in Singapore November 17-20, 2004 and took part in the Pan Asian SNP Consortium meeting in Singapore on 18th November, 2004.
24. Invited speaker, Council Member and the Chairman of the Fellowship Committee at the FAOBMB/IUBMB/A-IMBN Meeting held at Bangkok, Thailand from 22nd to 26th November, 2004.
25. Invited speaker at the International Conference Asia Biotech Forum 2005 at Kuala Lumpur from 3rd to 4th February, 2005.
26. Invited speaker at the Workshop entitled "Health of Populations in the Mediterranean in the post genomic era" in Tunisia from 4th to 5th March, 2005.
27. Attend the India Pharma Fund Limited inaugural board meeting at Mauritius on 17th March, 2005.
28. Delivered an invited talk at the HUGO's Tenth International Human Genome Meeting, HGM2005, Kyoto, Japan, from 18th to 21st April, 2005 and took part in the Pan Asian SNP Initiative Executive Committee Meeting and the Pan-Asia SNP Initiative Policy Review Board (PRB) Meeting.
29. Attended and delivered invited talk at the Workshop on "Promoting and Facilitating Innovation driven new ventures", held fro 29th May to 3rd June, 2005 at Technion – Israel Institute of Technology, Haifa, Israel.
30. Invited talk at the Albany 2005: The 14th Conversation at Albany, NY, USA from 14th -18th June,2005.
31. Invited talk at the Annual Convention of BIO 2005 in Philadelphia, USA from 19th-21st June 2005 and was a speaker at the CII Session on " India in the wake of 2005: A Hub of Innovation."
32. Visited Centre National de la Recherche Scientifique (CNRS), Paris, France from 23rd -25th June 2005 to discuss about possible future collaborations and prepare for joint projects in the area of Integrated Systems Biology for Health.
33. Attended the India Pharma Fund Limited board meeting at Mauritius on 4th-5th July 2005.
34. Attended and delivered invited talk at the 2005 International Symposium on Computational Biology & Bioinformatics (ISCBB2005) in Tokyo, Japan on 28th October, 2005.
35. Delivered invited talk at the meeting on Integrative Systems Biology for Health -TRANSCRIPTOME 2005 at Shanghai, China from 5th -10th November, 2005.
36. Attended the India Pharma Fund Limited board meeting at Mauritius on 10th-11th January, 2006.

37. Delivered invited talk the Taiwan-India Joint Symposium on Functional Genomics at Taipei, Taiwan on 3rd-4th March, 2006.
38. Invited lecture at the HUGO Asia Pacific Meeting held at Taipei, Taiwan from 6th-10th March, 2006.
39. Visit and invited talk at the Dept of Bioorganic Chemistry, Uppsala Universitet, Uppsala, Sweden, May 2006 (Hosted by Prof. Jyoti Chattopadhyaya).
40. Invited as a Chairman at the Bioinformatics Workshop at HUGO's Eleventh International Human Genome Meeting, HGM2006 at Helsinki, Finland from 31st May to 3rd June, 2006 and also delivered invited lecture in the EU Workshop on 3rd June, 2006.
41. Attended the India Pharma Fund Limited board meeting at Mauritius on 14th June, 2006.
42. Invited talk at the Human Variome Project Meeting at Melbourne, Australia from 20th to 23rd June, 2006.
43. Invited talk at the 2006 International Conference on Genomics in Hangzhou, China from 23rd – 25th October, 2006.
44. Attended the Data Analysis and Manuscript Writing Meeting of the Pan Asian SNP Initiative in Singapore from 9th – 11th November, 2006.
45. Attended the 3rd Meeting of the India-EC Steering Committee on S&T Cooperation at Brussels, Belgium on 16th & 17th November, 2006.
46. Invited to the 2nd UKIERI (UK-India Education and Research Initiative) Evaluation Panel meeting at London, UK on 28th – 29th November, 2006.
47. Visit to the University of Leicester, UK at the invitation of Prof. Anthony Brookes on 1st December, 2006.
48. Attended the India Pharma Fund Limited board meeting at Mauritius on 16th January, 2007.
49. Attended the Manuscript Writing Meeting of the Pan Asian SNP Initiative in Singapore from 20th – 21st March, 2007.
50. Invited as a Chairman at the Bioinformatics Workshop at HUGO's 12th International Human Genome Meeting, HGM2007 at Montreal, Canada from 21st to 24th May, 2007.
51. Visit in USA to Research Triangle Institute International, NC; National Human Genome Research Institute, Bethesda; invited talk at the National Cancer Institute, NIH, Bethesda and Center for Complex Disease, Genomics McKusick - Nathans Institute of Genetic Medicine, Johns Hopkins University, Baltimore from 25th May to 3rd June, 2007.

2007 onwards

1. Visit San Francisco, USA, to attend the Governing Body meeting of the Indo-US S&T Forum on 12 December, 2007.
2. Invited to deliver talk at the "Genesis" Conference, organised by London Biotechnology Network in London from 13-to 15 December, 2008.
3. Invited to deliver Plenary talk at the 7th HUGO-AP Meeting at Cebu, Philippines from 2- 5 April, 2008.
4. Visit to Kuala Lumpur, Malaysia, to attend the GRA Principal meeting from 10-11 April 2008.
5. Visit to London (British High Commission's invitation) for USA-Indo-S&T Forum 9-16 December 2008.
6. Visit to Manila, Philippines, HUGO Conference 1 April– 6 April 2008.
7. Visit to Kuala Lumpur, Malaysia, GRA Meeting, 9 April – 11 April 2008
8. Visit to China, China Academy Conference, 11-16 November 2008
9. Visit to Geneva, Expert Group Meeting of WHO, March 2009

10. Visit to Russia to Explore Possibility in the Area of Sustainable Energy, 12-20 May 2009.
11. Visit to Stockholm, Sweden to deliver a talk and discuss 'How Swedish and European innovation policies relate to the dynamic economies of India and China' in the joint seminar on "The strategic innovation plan of the EU – an international comparative outlook" of the Parliament of Sweden and Forum for Innovation Management (FIM), Stockholm at the Swedish Parliament. 11 -12 November 2009.
12. Visit to USA 20 -24 November 2009. First Workshop of the Asian Technology Information Program on 'High Performance Computing (HPC) in India' on 20 November at Portland, Oregon, b) reviewed ongoing cooperation, further strengthen the cooperation and identify more areas for S&T networking with University of California at Berkeley during 21- 22 November and c) visited Washington DC during 23-24 November to sign Traditional Knowledge Digital Library (TKDL) Access Agreement between CSIR and United States Patents & Trademarks Office (USPTO), US Department of Commerce.
13. Visit to Montpellier, France, 17-21 May 2010 to chair session at the HUGO-OECD Symposium on Genomics and Bio-economy.
14. Visit to London, UK, 18-19 June 2010 to share the experience of open innovation in CSIR through implementing the CSIR led global initiative on Open Source Drug Discovery (OSDD) in an interactive meeting on 'Pre-Competitive Boundaries and Open Innovation in Drug Discovery and Development' being organized by Wellcome Trust at London, England.
15. Visit to Russia 20-23 June 2010 to explore networking opportunities with the centers of excellence of the Siberian Branch of Russian Academy of Sciences (SB, RAS) at Novosibirsk .
16. Visit to USA: Washington DC, USA (24-25 June 2010) to attend the meeting of the Indo-US joint Commission on S&T as part of the Indian delegation led by Minister P. Chavan. Boston, USA (26 June 2010) to visit MIT

Invited Lectures delivered at various International laboratories, National and International Conferences

Lectures delivered in National Forum

1. Invited speaker, INDO/FRG seminar, Molecular Biology and Agriculture division, BARC Bombay, India, March 1982.
2. Invited speaker, Int. Symposium on Genome organisation and Expression in development, Differentiation and Neoplasia, Dept. of Zoology, University of Poona, Pune, Feb. 1984.
3. Invited speaker, Int. Symposium On Biomolecular structure and interactions, IISc. Bangalore, Dec. 1984.
4. Invited Speaker, XII Annual meeting of Indian Biophysical society, Dept. of Biochemistry, University of Mysore, Mysore, Feb. 1985.
5. Invited Speaker, 54th Annual meeting of the Society of Biological Chemists, Panthnagar, India, Nov. 1985.
6. Invited speaker, Int. Symposium on Immunochemistry, Structure and Function of Nucleic Acids, IISc., Bangalore, July 1987
7. Invited speaker, Mahabaleshwar Seminar in Modern Biology on "Molecular Evolution", Oct. 1987.
8. Invited speaker, Symposium of Genetic Engineering Research in India, IISc. Bangalore, July 1988.
9. Invited speaker, INDO-SOVIET symposium on Genetic Engineering, IICB, Calcutta, March 1989.
10. Invited speaker, International symposium on Bioseparation, CSIR Centre for Biochemicals, New Delhi, December 1989.
11. Guha Research Conference, Lakshadweep, India, 9th-13th January 1990.
12. Symposium speaker, INDO-SOVIET workshop on "DNA-Protein interaction and cross-linking" Bangalore, India. 21st-25th March 1990.
13. Invited Speaker, National Symposium on Biophysics, Madras, February 1991.
14. Guha Research Conference, Udaipur, India, March 1991.
15. Invited speaker, 57th Annual Meeting of the Academy, Pune, November 1991.
16. Invited speaker, "Gene Structure and Expression" symposium, IISc, Bangalore, December 1991.
17. Guha Research Conference, Kemmangundi, India, December 1991.
18. Invited speaker, Diamond Jubilee Annual General Body Meeting, Society of Biological Chemistry, Calcutta, December 1991.
19. Invited speaker, "Regulation of Gene Expression" Nagarbhavi, Bangalore, January 1992.
20. Dept. of Anatomy, All India Institute of Medical Sciences, New Delhi, India, Feb 24th-6th March 1992.
21. Dept. of Biotechnology (India), Extension Lecture, Dept. of Biochemistry, Gulbarga University, Gulbarga, India, July 1992.
22. Symposium speaker, Trends in DNA Structure-Function and Genome Organization, 11th-14th Jan, Bangalore, 1993.
23. Invited speaker, "Biophysics Symposium", Calcutta, February 1993.
24. Guha Research Conference, Dalhousie, India, May 1993.
25. Invited speaker, "International Symposium on Cellular & Molecular Aspects of Developmental Regulation" Pune, November 1993.
26. Invited speaker, "INSA Golden Jubilee Symposium" Delhi, January 1994.
27. Invited speaker, "Symposium on Bioinformatics: The current scenario", Calcutta, 1994.

28. Invited speaker, "Gene Therapy", Delhi, September 1994.
29. Symposium speaker, 16th International Congress of Biochemistry and Molecular Biology, Delhi, September 1994.
30. Symposium speaker, Asian Conference on Transcription (ACT III), Bangalore, September 1994.
31. Invited speaker, "Emerging Areas in Science and Technology", Jorhat, October 1995.
32. Symposium speaker, "Third International Symposium on Genetics, Health and Disease". Amritsar, December 1995.
33. Symposium speaker, "South-North Human Genome Conference", Delhi December 1995.
34. Symposium speaker, "Genome Analysis: Recent Trends and Applications", Hyderabad, Jan. 1996
35. Invited speaker, "Genome 96: Workshop on Biotechnology", Bangalore, January 1996.
36. Invited speaker, "Transcription Assembly", Hyderabad, August 1996.
37. Invited speaker, Society of Biological Chemists, Bangalore, Sept. 1996.
38. Symposium speaker, "MBU Silver Jubilee Symposium on Structural Biology", Bangalore, Dec. 1996.
39. Guha Research Conference, Mirik, India, December 1996.
40. AP Mitra Memorial Lecture, Dept. of Chemistry, Delhi Univ., Delhi, September, 1997
41. Diversity in Modern Biology – An Interdisciplinary Symposium, University of Delhi, South Campus, N. Delhi, September, 1997.
42. International Hands-on Training Course on DNA Fingerprinting, CCMB Hyderabad, India, November, 1997.
43. 46th Annual Conference of Neurological society of India, Jaipur, India, December 1997.
44. Dept. of Anthropology, Univ. of Delhi, Delhi, December 1997.
45. 49th Indian Pharmaceutical Congress, Thiruvanthapuram, India, December 1997.
46. Anniversary meeting of INSA, Hyderabad Univ., Hyderabad, India, December 1997.
47. Winter school on Human Genetics, I.S.I., Calcutta, January, 1998.
48. Second annual National Convention of ADNAT, CCMB Hyderabad, March 1998.
49. National Defence College, New Delhi, March 1998.
50. Jawahar Lal Nehru University, New Delhi, March 1998.
51. Vision for Neurosciences in next millennium, Indian Habitat Centre, New Delhi, March 1998.
52. Seminar on Science & Technology-21st century challenges (ST-2000), Jamia Millia Islamia, New Delhi, March 1998.
53. Indo-French Workshop on new Opportunities in Molecular Technologies, Ashoka Hotel, Bangalore, March 1998.
54. Frontiers in Biomedical Research, Ambedkar Centre for Biomedical Research, University of Delhi, Delhi, April 1998.
55. All India Institute of Medical Sciences, New Delhi, April 1998.
56. Director's Conference, NAL, Bangalore, May 1998.
57. National Academy of Sciences, Allahabad 1998.
58. St. Stephen's College, Delhi, September 1998.
59. Delhi University, Botanical Society, Dept. of Botany, Delhi University, Delhi.
60. 5th Annual Symposium Ranbaxy Science Foundation, Gurgaon, NII, New Delhi, October, 1998.
61. International Update on Neurosciences, All India Institute of Medical Sciences, New Delhi, November 1998.

62. Workshop on Sequence Analysis & Molecular Modelling, School of Life Sciences, Jawahar Lal Nehru University, New Delhi, December 1998.
63. 67th Annual Meeting of Society of Biological Chemists (I), School of Life Sciences, Jawahar Lal Nehru University, New Delhi, December, 1998.
64. 86th Session of the Indian Science Congress Association, Anna University, Chennai, January 1999.
65. Workshop on "DNA Isolation from Forensic Specimen & STRs analysis", Central Forensic Science Laboratory, Calcutta, March 14-26, 1999.
66. Golden Jubilee Celebrations, VP Chest Inst. Delhi, April 1999.
67. Symposium on Research in Molecular Biology and Biotechnology in India: Challenges in the next millennium, India Institute of Chemical Biology, Calcutta, September 1999.
68. National Symposium on Bimolecular Electronics-Interfacing Physics and Chemistry with Biology, National Physics Laboratory, New Delhi, September 1999.
69. Sixty fifth Annual meeting, Indian Academy of Sciences, CDRI, Lucknow, October 29-31, 1999.
70. Trends in Biochemistry, Sixth meeting, Department of Biotechnology, University of Delhi, New Delhi, November 23-24, 1999.
71. Invited lecture at Miranda House College, Delhi, December 1999.
72. 68th Annual Meeting of SBC (I) & Symposium on Current Trends in Biology, Indian Institute of Science, Bangalore, December 27-29, 1999.
73. Millennium Lecture at 87th Science Congress in Plenary Session Emerging Frontiers in Basic Science and Technology, Pune, Jan 4th 2000.
74. Symposium on Impact of Science on Society in next Millennium at Vivekananda Institute of Medical Sciences, Calcutta, 7th Jan 2000.
75. Invited lecture at National Aerospace Laboratories Bangalore, July 20th, 2000.
76. Seminar on Beyond Genome- Bioinformatics and Drug Research, CII, Delhi, July 25th 2000.
77. Seminar on Developing India's Capability In Genomics: New Era of Public – Private Partnership in Genomics IT & Medicine, FICCI, New Delhi, July 26th 2000.
78. Seminar on Beyond Genome- Relevance for India, CII, Delhi, July 25th 2000.
79. Colloquium on The Human Genome: Scientific and Ethical Implications, Centre for Philosophy and Foundations of Science, New Delhi, August 7th, 2000.
80. Invited lecture at the Training Programme for Senior IAS Officers, Lal Bahadur Shastri National Academy of Administration, Mussoorie, 17th August 2000.
81. Invited lecture at Defence Science Forum, Metcalfe House, Delhi, August 24th 2000.
82. Invited lecture at Kirori Mal College, Delhi, 27th September 2000.
83. INDO-CUBA Workshop on Biotechnology in health care, INMAS, Delhi, 3rd October 2000.
84. Seminar on India Chem 2000 Conference, FICCI, New Delhi, 6th October 2000.
85. Invited lecture during the Biotechnology Conference organised by Chemtech Foundation, Mumbai, 10th November 2000.
86. Invited lecture on 5th International meeting on "Molecular Epidemiology and Evolutionary Genetics of Infectious diseases", CDFD, Hyderabad, 14th November 2000
87. Invited lecture at Daulat Ram College, Delhi, 16th November 2000.
88. Invited lecture at National Science Centre during the symposium Biotechnology India 2000 organised by Exhibitions India Pvt. Ltd, 29 November 2000.
89. Invited lecture at International Workshop on "Innovation in Science and Technology: Economic, philosophical and social dimensions" held at CSIR Science Centre, organized by NISTADS, 5th December 2000.

90. Delivered lecture at Indian Institute of Chemical Biology, Calcutta during the 69th Annual meeting of the Society of Biological Chemists (India), 8th December 2000.
91. Invited lecture at Chembiotech, Calcutta during the symposium Chemcon 2000, 19th December 2000.
92. Seminar on "Haemoglobinopathies-South Asia-Problems and Prevention" at Vivekananda Institute of Medical Sciences, Calcutta, 29th December 2000.
93. Invited lecture at J. N. Tata Auditorium, National Science Seminar Complex, IIS Campus Bangalore organised Confederation of Indian Industry, India, 16th January 2001.
94. Invited lecture on "Information Technology & Biotechnology: Bridge over Genome River" at M. S. Ramaiah School of Advanced Studies, Bangalore 17th January 2001.
95. Delivered a lecture at Chemistry Society Hindu College, Delhi University, 24th January 2001
96. Delivered a lecture on "DNA Microarray Technology" Workshop at IISc Bangalore, 19th February 2001.
97. Delivered a lecture in the "ISHG-2001" XXVI Annual Conference of the Indian Society of Human Genetics at CCMB Hyderabad, 21st February 2001.
98. Delivered a lecture in the Workshop cum Seminar on Bioinformatics during the national symposium – Biohorizon 2001 at IIT, Delhi, 24th February 2001.
99. Delivered a lecture during the national Conference on "Human Genome-The Prospective Research Strategies" at Post Graduate Institute of Medical Education & Research, Chandigarh, 24th-25th August 2001.
100. Delivered a lecture at the meeting on "Biomolecular Conformation and Function" at Indian Institute of Science, Bangalore, 26th July 2001.
101. Delivered a lecture on "The Human Genome Research and its Social Implications" at Indian Agricultural Research Institute, New Delhi, 29th August 2001.
102. Round Table Discussion on Genomics, IISc Bangalore, 3rd September 2001.
103. "Population Polymorphism Scanning: A functional genomics approach", for the society young Scientist at AIIMS at 7th September 2001.
104. INDO GERMAN Symposium on Genomics at Chandigarh 18th September 2001.
105. Delivered three Lectures at IIT, Kanpur: "Functional Genomics in silico", "Population Polymorphism Scanning: A Novel method for Gene Function Discovery" and "Public Lecture: Beyond the Human Genome Sequence". 15th – 16th October 2001.
106. Delivered a Talk at MV Symposium, IISc Bangalore, on PLHOSTFA novel tool for identification of Functional signatures and Comparative genomics 22nd – 29th November 2001.
107. "DNA Microarray opportunities and Challenges ahead", at Mini-symposium ICGEB, New Delhi. 30th November 2001.
108. Delivered a Lecture at Workshop on Functional Genomics at ISI, Kolkata. 11th December 2001.
109. Delivered a talk on "Genomics and New Drug Discovery" at Goa. 15th December 2001.
110. Delivered a talk "BT-IT: Bridge over River Genome" at Techfest, IIT- Mumbai. 2nd February 2002.
111. Delivered a talk on "BT-IT: Bridge over River Genome" at IIT, Kharagpur. 11th February 2002.
112. Delivered a Lecture "PLHOSTFA novel tool for identification of Functional signatures and Comparative genomics at ADNAT Symposium CCMB, Hyderabad. 23rd February 2002.
113. Delivered a talk on "Population Polymorphism Scanning: A Functional Genomics approach at INDO French workshop INSA on 4th March 2002.
114. Delivered lecture during the Pharmacogenomics meeting at DBT on July 11th 2002.
115. Delivered an invited lecture at Regional Research Laboratory, Trivandrum on Beyond the Human Genome Sequence: Predictive and Personalised Medicine" on November 22th 2002.

116. Delivered lecture at CCMB, Hyderabad on "Comparative and Functional Genomics In silico" in the International Knowledge Millennium Conference at the Symposium 'The Current Excitement in Biology' on November 24-29th 2002.
117. Delivered a talk on "Comparative and Functional Genomics: New opportunities and Challenges" at Bundelkhand University, Jhansi during the 'Emerging Areas in Biomedical Sciences' on December 28-30th, 2002.
118. Delivered invited lecture in the celebration of '50 years of DNA Double Helix' at Guru Gobind Singh Indraprastha University on the topic "From Helix to Genomics – A 50 year Saga" on January 11th, 2003.
119. Delivered lecture during the Workshop 'Knowledge Discovery in Genomics & Proteomics Bioinformatics Approach' at Pune University on January 15th, 2003.
120. Delivered lecture on 'The Need for Grand Vision and Microplanning' at CIMAP Lucknow during the Annual Meeting of Planning and Business Development Scientists on January 22-23th, 2003.
121. Delivered lecture Title: "B.K. Bachhawat Memorial Lecture" during the Symposium 'Frontiers in Molecular Medicine' at Jawahar Lal Nehru University on February 10th, 2003.
122. Delivered lecture Title: "Comparative Genomics: An Approach to Seamless Biology" during the Yeast 2003 Symposium at IMT in March 2003.
123. Delivered lecture on "Human Genome Project" at the Shaheed Rajguru College of Applied Sciences for Women, Univ. of Delhi on February 26th, 2003
124. Delivered lecture on 'Beyond the Human Genome Sequence: Predictive and Personalized Medicine' in DIPAS, Delhi on February 28th, 2003.
125. Delivered lecture on 23.3.03 during the Knowledge Millennium III- the Business of Biotechnology organised by ASSOCHAM during March 21-23th, 2003.
126. Delivered lecture on "Showcasing Institutional R&D: IGIB" in Bangalore Bio 2003 on April, 2003.
127. Delivered Dr. C. R. Krishnamurthy Award lecture at CDRI, Lucknow on March 4th, 2003
128. Delivered lecture in a symposium on "Genomics: Challenges and opportunities, at Hyderabad on April, 2003
129. Delivered lecture during workshop on "Genetic Epidemiological Methods for dissection of complex human traits" at ISI, Kolkata on 11 June 2003.
130. Delivered lecture at Miranda House, Delhi University on "Borderless Science: Integration of Biology, Chemistry and Information Technology", on Sep 22nd 2003.
131. Delivered lecture on Role of Bioinformatics in Genomics" in Symposium "Computational challenges in Bioinformatics" at C-DAC, Pune on 5th Nov 2004.
132. Delivered lecture on "SNPs, Chips, Informatics and Predictive Medicine" at ITRC, Lucknow on 7th Nov 2003.
133. Delivered Talk on "IPR & PPP In Biotechnology" on 17th Nov 2003 at TERI Retreat, Delhi.
134. Delivered lecture at Sri Venkateswara College, Delhi University on "Borderless Science: Integration of Biology, Chemistry and Information Technology", on Nov 26th 2003.
135. Delivered lecture at FAOBMB Symposium at IGIB, on "Variation and Conservation: a balancing act in genome" on 6th Dec 2003.
136. Delivered lecture on "Functional Genomics to System Biology: Integration of Information Technology to biology" at Indian Science Congress, 3-7 Jan 2004, Chandigarh.
137. Delivered lecture on "Functional Genomics to System Biology: Integration of Information Technology to biology" at All India Cell Biology Conference & International Symposium, Pune on Jan 9th 2004.
138. Delivered talk on "Globalization of Biotech R&D: Role of Indian Institutions" in CII conference "BioEconomy-Growth Engine of 21st century" on 5th Feb 2004.

139. Delivered talk on "New Horizons in BioTechnology - Planning for the Century" at TIFAC, Delhi on 10th Feb 2004.
140. Delivered talk on "Challenge of Managing Creativity" at TERI Retreat, Delhi on 11th Feb 2004.
141. Delivered talk on "Three Decades @MBU: Triple Helix to Genomics" at Molecular Biophysics Unit, Indian Institute of Science, Bangalore on 29th April, 2004
142. Delivered inaugural and keynote lecture at Indo-Tunisian Workshop on Bioinformatics in Medicine on 28th June, 2004 at Delhi on "Predictive Medicine in Genomic Era".
143. Delivered a lecture on "Beyond the Human Genome Sequence" at Kulachi Hansraj Model School, Delhi on 28th June 2004.
144. Delivered 14th G.S. Sidhu Science Lecture at IICT, Hyderabad on 2nd July 2004 on "SNPs, Chips, Informatics and Predictive Medicine".
145. Talk on "Public – Private Partnership in Biotech R&D" at IIM, Ahmedabad on July 3rd, 2004.
146. Invited lecture at 4th Management Development Programme on harnessing Intellectual Property for Strategic Competitive Advantage on July 3rd 2004 at IIM, Ahmedabad on "IP Mediated technology collaboration between public and private sector".
147. Delivered talk at Bangalore Bio 2004 on 12th July 2004 in the session 'Current Advances in Biotechnological Session' on "Functional Genomics to System Biology- Integration of Information Technology to Biology".
148. Delivered plenary talk "Predictive Medicine in Genomic Era" at Indo-Tunisian Workshop on Bioinformatics in Medicine, New Delhi on 28 June 2004.
149. Delivered invited lecture on "SNPS, Chips, Informatics and Predictive Medicine" at "Genomics 2004: Challenges and opportunities" organised by National Centre for Plant Genome Research, Delhi on 13th September, 2004.
150. Delivered talk on "Science and Business of Bioinformatics: Will India Lead or Follow?" at Centre for DNA Fingerprinting and Diagnostics, Hyderabad on 14th September 2004.
151. Delivered lecture as faculty of the INSA sponsored workshop on Genomics and Medicine at University College of Medical Sciences, Delhi on 23rd September, 2004.
152. Delivered talk on "Public – Private Partnership in Biotech R&D Opportunities in Life Sciences" at Technology Summit & Technology Platform 2004, organised by CII in Delhi on 19th October, 2004.
153. Delivered Invited Lecture on " "Dare to Dream & Dream to Dare": Need for sustained Commitment to Implement Dreams" at CII Conference "Building Innovative Pharma in India" on 5th Nov 2004 in New Delhi at the Session "Branding India-The Hub of Innovation".
154. Delivered an invited talk at the session on IITians Empowering India: Global Competitiveness: Biotechnology at the pan IIT meet on the 24 December 2004, entitled "Global Competitiveness in Biotechnology: Need for Innovation" held at Delhi.
155. Chaired the session 'Indian Goal in Genomics' and delivered a talk on 6 January, 2005 at the 92nd Session of Indian Science Congress held at Ahmedabad, entitled "Genomics to System Biology: An Overview".
156. Delivered an invited lecture at Indian Statistical Institute, Kolkata on 17 January, 2005 on "Genome Research: Where do we stand?"
157. Delivered an invited talk at the International Conference '50 years of discovery of triple "Triple Helix to Comparative Proteomics" organised by University of Pune.
158. Delivered an invited lecture at the Ramanbhai Foundation 2nd International Symposium at Ahmedabad titled "Comparative Proteomics in silico for Drug Target Identification" on 24th January, 2005.
159. Delivered invited talk at the International Conference, BioAsia 2005 in Hyderabad at the Student Forum entitled "Global Competitiveness in Biotechnology: Need for Innovation" on 10th February, 2005.

160. Delivered a talk at International Symposium on "Genes, Evolution and Complex Diseases" at NCBS, Bangalore on 19 February, 2005 at the Session "Bioinformatics approaches to the study of complex diseases": "Schizophrenia as a Case Study".
161. Delivered an invited talk at the ADNAT Convention / Symposium on Molecular Medicine and Health in Hyderabad on 20 February 2005 entitled "Comparative Proteomics for Drug Target Identification".
162. Chief Guest at the Book Release Ceremony 'Microorganisms: Their Biotechnological Applications' on 9 May 2005 at AMITY Campus, Noida and delivered a talk entitled "Predictive Medicine and Health Research in the Post-Genomic Era".
163. Delivered an invited talk at the 11th Technology Summit & Technology Platform organized by CII, New Delhi on 21st September, entitled "Indian Biotech at the Crossroads of Development".
164. Delivered an invited talk at the Symposium "Drug Discovery to Clinical Trials" at Mumbai entitled "Current status of India's strengths capabilities in early stage research" on 6th October, 2005.
165. Delivered a plenary lecture at the Conference Molecular Mechanism of Diseases and Drug Action (MMDDA 2005) at Saha Institute of Nuclear Physics, Kolkata on 16th November, 2005 entitled "Novel Genomic approaches to understand complex disorders & host pathogen interaction".
166. Delivered an invited talk entitled "The Security Dimensions in Biological Research" at the NISDA Security Conference 2005 "Conceptualizing Security in the 21st Century" on 19th November, 2005 at Pune.
167. Delivered invited talk at the session 'Bio Technology: Translating R&D into Commercial Opportunities' at the INFOCOM 2005, Kolkata entitled "Leveraging Indian IT for Global Drug Development" on 8th December, 2005.
168. Delivered an invited talk at the Annual Festival of the Chemistry Society of the St. Stephen's College, Delhi University titled "Comparative Genomics and Pathway Modeling approaches towards Novel Drug Target Identification" on 22nd December, 2005.
169. Delivered the Kapil Sood Oration at the UP NEUROCON, organized by the Fortis Hospitals Hospitals titled "Predictive Medicine- from Bench to Bedside" on 26th February, 2006 at Noida.
170. Delivered a talk titled "Keeping up with the Expectation in Science!" at the Symposium Frontiers of Molecular Biology in the New Millennium at Jawaharlal Nehru University, New Delhi on 12th April, 2006.
171. Delivered the Inaugural Keynote address at the Consultative Meeting on National Innovation Systems (NIS) of India entitled "Innovation Systems for R&D in Genomics" on 19th September, 2006 at New Delhi organized by United Nations Asian and Pacific Centre for Transfer of Technology, DSIR, CDC and NRDC.
172. Delivered invited talk at the International meeting on RNAi at ICgeb, New Delhi 06 entitled "MicroRNA mediated regulatory networks: an in-silico approach" on 27th October 2006.
173. Delivered a talk at the Jagadis Bose National Science Talent Search (JBNSTS) Science Camp entitled "Joy of Doing Science: Learning vs. Creativity" on 21st November, 2006 at Kolkata.
174. Delivered an invited lecture at the 2nd Global Conference and Exhibition on "India R&D 2006- Mind to Market" organized jointly by FICCI and DST entitled "Positioning For The Future: Need For Innovation" on 5th December, 2006 at New Delhi.
175. Delivered an invited lecture at the EMBO International Workshop on Human Evolution and Disease at Hyderabad on 7th December, 2007 entitled "Genotype to Phenotype for Complex Disorders: An Integrative Biology Approach".
176. Delivered an invited plenary lecture at the International Winter School on Bioinformatics organized by University of Hyderabad in Hyderabad entitled "Genome Informatics: Opportunities and Challenges Ahead" on 8th December, 2006.
177. Delivered an invited talk at session on 'Beyond Human Genome' during the 75th Meeting of the Society for Biological Chemists (SBC), India titled "Harvesting the Human Genome Sequence: Need for an Integrative Approach" at New Delhi on 11th December, 2006.

178. Delivered an invited talk in the National Science Festival organized by St. Stephens College, Delhi titled "Becoming of a Scientist: Learning vs. Creativity" on 20th December, 2006.
179. Delivered an invited talk at the International seminar on Innovation, Creativity and Enterprise organized by University of Mumbai, Institute of Chemical Technology titled "Innovation lead Institutional Transformation: A Case Study" on 24th December, 2006 at Mumbai.
180. Delivered the Endowment Lecture [Professor P. K. Bose Memorial Lecture for the year 2004] at the 43rd Annual Convention of Chemists held in the Department of Chemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad on 25th December, 2006 entitled "Chemistry to Genomics: A Challenging Journey".
181. Delivered the valedictory lecture at the XXXII Annual Conference of ISHG, and International Symposium on 'Deconstructing Human Diseases: The Genomic Advantage' at Kolkata on 16th February, 2007 entitled "Human Genome Research: Road Ahead".
182. Delivered the National Science Day Lecture organized by Indian National Science Academy (INSA), New Delhi on 28th February, 2007 titled "IT for New Biology : Future Challenges".
183. Delivered an invited talk at the International High Performance Computing (HPC) Users Conference on Leadership Computing for Science and Industry organized at Indian Institute of Science, Bangalore titled "Human Genome Research: Computational Challenges Ahead" on 2nd March, 2007.
184. Delivered an invited talk at the National Symposium on Current Trends in Zoological Research organized by Presidency College, Kolkata titled "IT for New Biology : Future Challenges" on 10th March, 2007.
185. Delivered an invited talk at the National Conference on Health Care Biotechnology in Bangalore titled "Genome Sequence to Molecular Medicine: The Pharma Business vs. Affordable Health for All" on 21st April, 2007.
186. Delivered an invited talk at the International Symposium on Chromosomes to Genome organized by Centre for Cellular and Molecular Biology (CCMB) on 4th July 2007 titled "Looking for Disease Genes: Whole Genome Association Studies vs. Systems Biology Approach".
187. Delivered the Prof. G. N. Ramachandran Oration lecture at the Bioinformatics Centre, University of Pune on 1st August, 2007 titled "Tale of Two Cities: Hope and Reality".
188. Delivered an invited talk at the Biotechnology Seminar organized by Modern School, Vasant Vihar, New Delhi titled "IT for New Biology: Future Challenges" on 1st September, 2007.
189. Delivered the Foundation Day lecture of Birbal Sahni Institute of Palaeobotany, Lucknow titled "Human Genome Research: Road Ahead" on 10th September, 2007.
190. Delivered an invited lecture at the 5th Global Knowledge Millennium Summit: B2B in Biotechnology & Nanotechnology" organized by ASSOCHAM, Delhi titled "Open Source Drug Discovery: a solution for Infectious Diseases" on 19th September, 2007.
191. Delivered the inaugural talk at the Symposium on Problems of Chronic Anemias in India: genetics and Environment organized by Vivekananda Institute of Medical Sciences, Kolkata titled "Human Genome Variome Project: Hope and Reality" on 30th November, 2007.
192. Delivered an invited talk at the INSA-CAS workshop on structural biology during 21-23 December 2007 at IISc, Bangalore titled "miRNA Mediated novel regulatory networks: an in silico approach".
193. Delivered an invited talk at the Science Commons-drug discovery meeting at IIT Delhi.
194. Delivered Keynote address titled "Human Genome Variome and Predictive Medicine: Hope & Reality" on the occasion of the Foundation Day of Institute of Life Sciences, Hyderabad on 29 January, 2008.
195. Twelfth Convocation address, National Institute of Mental Health and Neuro Science, Bangalore, Talk entitled Predictive Medicine: Affordable Drugs for All, 22 February 2008
196. Delivered the 15th PC Mahalanobis memorial Lecture during 15th State S&T Congress at Bengal Engineering College, Shibpur, Howrah, titled "Tale of 3 cities: Hope and Reality" on 28 February, 2008.

197. Delivered a talk titled "Taking Technology from Lab to People" at Indian National Science Academy (INSA), Delhi on 14 March, 2008.
198. Delivered Sir Gangaram Oration Award Lecture at Sir Gangaram Hospital, New Delhi on 13 April, 2006.
199. Delivered the Vision talk at the CEO Conclave during Bangalore Bio 2008 at Bangalore titled "Engineering Bio-systems: beyond the Horizon" on 24 April, 2008.
200. First G N Ramachandran Lecture, CAS Crystallography and Biophysics, University of Madras, Chennai, 18 October 2008
201. Key note address at PPP Summit 2008 "Nurturing PPP in Life Science Space", 4 July 2008.
202. Valedictory address at NIAS Interactive Session at IISc Campus, 2 August, 2008.
203. Vikram Sarabhai memorial lecture – 2008, 7 August, 2008.
204. NEERI Lecture "Importance of Leadership", 23rd August, 2008.
205. Welcome address and CSIR Foundation Day Lecture –Know Your Genome, 26 September, 2008.
206. Foundation Day Oration, Rama Krishna Mission, Kolkata "Are Life Scientists trying to play God", 29 January, 2009.
207. Amar Nath Bhaduri Memorial Lecture, Dept.of Biotechnology, Calcutta University, Kolkata, 28 March, 2009.
208. Convocation address, Vidyasagar University, 2 April 2009
209. Talk delivered Knowledge 2009, All India Management Association, 07 October 2009
210. Talk delivered as Chief Guest, Valedictory address: POINTS 13 Defence Institute of Advanced Technology, Pune 26 October 2009
211. Talk "Making India a Powerhouse for semiconductor Design", INAE Workshop, New Delhi 31 October 2009
212. Keynote Speaker, International Symposium on Molecular Pathology and Applied Genomics, New Delhi 06 November 2009
213. Convocation Address. Guru Gobind Indraprastha University, "The Indian Innovation System; A Novel Approach to Collaborative research for Global Good", 01 December 2009
214. Talk delivered: Looking at Microbes for 30 years through the eyes of a Physical Chemist, Association of Microbiologists of India, Pune 15th December 2009
215. Plenary talk: Science Programmes for the Future. 97th Indian Science Congress, Thiruvananthapuram January 2010
216. Address at NCL's Diamond Jubilee. Pune 01 April 2010
217. Convocation Address. North Bengal University, "Preparing for Leadership of Tomorrow", 8 April 2010
218. Keynote Address: Connect 2 Decode, New Delhi, 09 April 2010
219. Talk delivered: Genomics and Health. Annual Meeting, International Life Sciences Institute, New Delhi 30 April 2010.
220. Delivered talk entitled Indian Bio-Leadership in 2015 at India Bio, 01 June 2010, Bangalore.
221. Convocation Address. NIPER-Kolkata, "Positioning for Success: Leveraging the Power of Dreams, Commitment and Perseverance", 11 June 2010
222. Keynote Address entitled Knowledge Creation and Open Innovation for global good: New knowledge Society Movement in India, Society for Technology and National Development and Delhi Technological University, 05 July 2010, New Delhi
223. Plenary talk entitled Bioinformatics: An Overview at INSPIRE Mentorship Programme, DS Kothari Centre for Research & Innovation in Science Education, Miranda House, New Delhi, 13 July 2010

224. Delivered Inaugural Keynote Address entitled Tale of Three Cities: A Molecular Journey, at Acharya PC Ray Memorial Symposium on Chemistry Today (2010) organized by The Indian Chemical Society at University College of S&T, Kolkata, 2 August 2010
225. Delivered ASET Colloquium Talk entitled Knowledge Creation and Open Innovation for Global Good, TIFR Colaba Campus, 13 August 2010
226. Delivered talk on Open Innovation: A Novel Approach to Collaborative Research for Global Good; Swedish Trade Council, Embassy of Sweden, 29 November 2010, New Delhi
227. Delivered talk on Future of Biomedical Research: Open Innovation and Systems Approach; 2010 CSIR-IGIB / Mayo Clinic Joint International Symposium Complex Diseases-Translation of Basic Approaches; Delhi, 02 December 2010

Lectures delivered in International Forum

1. National Cancer Research Institute, Tokyo, Japan, Dec.1981.
2. Dept. of Biophysics and Biochemistry, Faculty of Science, University of Tokyo, Japan, December 1981 (Hosted by Prof. T. Miyazawa).
3. Dept. of Pharmacology, University of Osaka, Japan, Dec. 1981 (Hosted by Prof. M. Ikehara).
4. Dept. of Physics, Faculty of Science, University of Tokyo, Japan, Dec. 1981 (Hosted by Prof. A. Wada).
5. Section Polymere, University of Ulm, Ulm, West Germany, May 1985 (Hosted by Prof. H. Seliger).
6. Centre for Crystallographic Research, Roswell Park Memorial Institute, Buffalo, USA, August 1985 (Hosted by Prof. R. Parthasarathy).
7. Dept. of Biophysics and Dept. of Human Genetics, University of Colombia, N.Y. USA, Sept. 1985 (Hosted by Prof. C. R. Cantor).
8. Dept. of Biology, Massachusetts Institute of Technology, Cambridge, USA, Sept.1985 (Hosted by Prof. A. Rich).
9. Chromosoma Lecture, Institute of Molecular Biology, USSR Academy of Sciences, Moscow May 1988 (Hosted by Acad. A. D. Mirzabekov).
10. Institute of Molecular Genetics, USSR Academy of Sciences, Moscow May 1988 (Hosted by Prof. Frank Kamaenestkii).
11. Dept. of Biochemistry, Tufts University, Boston, USA June 1989 (Hosted by Prof. B.D.Stollar).
12. Dept. of Biology, Massachusetts Institute of Technology, Cambridge, USA June 1989 (Hosted by Prof. A. Rich).
13. Symposium speaker, 6th Conversation in Biomolecular Stereodynamics, Albany, N.Y. USA, June 1989.
14. Invited speaker, 2nd International symposium of Protein Structure Functions, University of Karachi, Pakistan, December 1989.
15. Dept. of Biology, Massachusetts Institute of Technology, Cambridge, USA, July, 1990. (Hosted by Prof. A. Rich)
16. Dept. of Genetics, University of Washington, Seattle, USA, Aug 1990 (Hosted by Prof. Stanley Gartler).
17. Invited speaker, International Symposium on "Synthetic Oligonucleotides: Problems and Frontiers of Practical Application". Shemyakin Institute, Moscow, June 1991.
18. Institute of Molecular Biology, USSR Academy of Sciences, Moscow, June 1991 (Hosted by Acad, A.D. Mirzabekov).
19. Institute of Molecular Genetics, USSR Academy of Sciences, Moscow, June 1991 (Hosted by Prof. Frank Kamaenestkii).

20. Institute of Cytogenetics, USSR Academy of Sciences, Leningrad June 1991.
21. Symposium speaker, 8th Conversation in Biomolecular Stereodynamics, Albany, New York, USA 1993.
22. Dept. of Biophysics, University Paris Nord, Paris, France, June 1993 (Hosted by Prof. C. Helen).
23. Dept. of Biophysics, Museum National D'Histoire Naturelle, Paris, France, 1993 (Hosted by Prof. C. Helene).
24. Dept. of Chemistry, New York University, New York, USA, 1993 (Hosted by Prof. N.R. Kallenbach).
25. Dept. of Molecular Biology, National Institute of Health, Maryland, USA, 1993 (Hosted by S. Adhya).
26. Dept. of Chemistry, University of Rutgers, New Jersey, USA, 1993 (Hosted by Prof. Wilma Olson).
27. Dept. of Biology, MIT, Cambridge, Boston, USA, 1993 (Hosted by Prof. A. Rich).
28. Dept. of Human Genome Centre, Boston University, Cambridge, USA, 1993 (Hosted by Prof. Charles R. Cantor).
29. Invited speaker, 2nd Indo-Japan Workshop and ACT IV meeting Japan, March 1996.
30. National Institute of Genetics, Mashima, Japan, March 1996 (Hosted by Prof. T. Gojobori).
31. Banyu Tsukuba Research Institute, Tsukuba, Japan, March 1996 (Hosted by Prof. Susuma Nishimura).
32. Invited speaker, "Human Genome Treaty Symposium, Berlin, Germany, October 1996.
33. Institute of Human Genetic, Berlin, Germany, October 1996 (Hosted by Prof. Karl Sperling).
34. Institute for Kristallographie, Germany, October 1996 (Hosted by Prof. W. Saenger).
35. Max-Planck Inst. fur Biophysical Chem, Germany, October 1996 (Hosted by Prof. T.M. Jovin).
36. Max-Delbruck Centre for Molecular Medicine, Berlin, Germany, (Hosted by Dr. U. Heinmann).
37. Genetique Medicale Et Developement, Marseille, France, October 1996 (Hosted by Prof. M. Fontes).
38. FAOBMB 14th Symposium, University of Otago, Dunedin, New Zealand, November 28th – December 3rd 1999.
39. Invited lecture, Institute of Biomedical Research, University of Sydney, December 1999.
40. Delivered a talk at UNESCO on "Genome Research & IPR" 13th June, 2001.
41. Delivered a talk at Vienna on "Genome Research & Patenting in Developing Countries" on 22nd November 2001.
42. Delivered a talk at Geneva on Rights & Issues relating to the "Genetic Resources of the Developing Countries" on 24th January 2002.
43. Delivered a talk in "Disease Genomics Workshop" at HUGO meeting at Shanghai, April 2002.
44. Invited Lecture at Beijing in Genome Centre on April 2002.
45. Delivered an invited Lecture in Bioscience Asia meeting at Taiwan on "Functional Genomics in Silico" on 22nd May, 2002.
46. Delivered lecture during the India Day Celebrations at Royal Society, London on December 11th, 2002.
47. Delivered talk on "Variation and Conservation Balancing Act in Genome: Comparative Genomics Approach" at RIKEN, Japan on 22nd April, 2004.
48. Delivered talk on "BT-IT Bridges over Genome River: Functional Genomics to System Biology" at India Biotechnology Seminar in Japan on 23rd April, 2004.

49. Delivered a talk "SNPs, Chips, Informatics and Predictive Medicine" at Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland on 6th October 2004.
50. Delivered talk on "Variation and conservation: a balancing act in genome" at the Sino-India Workshop on genome Informatics at Hangzhou, China on 30th October, 2004.
51. Delivered a talk at the Pan Asian SNP Consortium meeting held at Singapore on 18th November entitled "A brief comment on Pan Asian SNP Project".
52. Delivered invited talk at the 17th FAOBMB/IUBMB/A-IMBN Meeting entitled "Comparative Proteomics in silico for drug target identification" held at Bangkok, Thailand from 22nd to 26th November, 2004.
53. Delivered invited lecture at the Asia Biotech Forum 2005 at Kuala Lumpur titled "Private-Public Partnership in Genomics & Bioinformatics: An Indian Perspective" on 4th February 2005.
54. Delivered inaugural and keynote address at the Workshop "Health of Populations in the Mediterranean in the post genomic era" in Tunisia on 4th March, 2005 entitled "Predictive Medicine and Health Research in the Post Genomic Era".
55. Delivered an invited talk at the HGM 2005, held at Kyoto on 19th April, 2005 entitled "Conservation and Variation: A Balancing Act in the Genome".
56. Delivered talk on "Identification of Evolutionarily Conserved Polypeptide folds by Comparative Genomics" at Institute of Evolution, University of Haifa, Israel on 29th May, 2005.
57. Delivered talk entitled "Transforming CSIR to Council for Scientific & Innovative Research" at the Workshop on "Promoting and Facilitating Innovation driven new ventures" in Haifa, Israel on 31st May, 2005.
58. Delivered the BIGROC Lecture at Weizmann Institute of Science, Rehovot, Israel on 2nd June, 2005 entitled "Conservation and Variation: A Balancing Act in the Genome".
59. Delivered an invited talk at session on Comparative genomics in the Albany 2005: The 14th Conversation at Albany, NY, USA entitled "Conservation and Variation: A Balancing Act in the Genome".
60. Delivered an invited talk at the CII session 'Enabling Global Drug Discovery by Leveraging Information Technology prowess in India' at the BIO 2005 in Philadelphia, USA on 21st June 2005 entitled "Identification of Novel Drug Targets using In Silico Comparative Genomics and System Biology Approach".
61. Delivered an invited talk entitled "Comparative Genomics and pathway modeling approaches towards Novel Drug Target Identification" at the India session at the 2005 International Symposium on Computational Biology & Bioinformatics (ISCBB2005) in Tokyo, Japan on 28th October, 2005.
62. Invited to co-chair the session on "Developing the Proper Context for Systems Biology" and deliver a talk entitled "Need for High Input Biology for Systems Biology Approach" at the meeting on Integrative Systems Biology for Health -TRANSCRIPTOME 2005 at Shanghai on 9th November, 2005.
63. Delivered a talk at the Taiwan-India Joint Symposium on Functional Genomics at Taipei, Taiwan on 3rd-4th March, 2006 titled Comparative Genomics and Pathway Modelling approaches towards Novel Drug Target Identification.
64. Co-chaired and delivered a talk at the session "Biobank" at the HUGO Asia Pacific Meeting held at Taipei, Taiwan from 6th-10th March, 2006 titled 'Indian Genome Variation Database: From a Disease Perspective'.
65. Delivered an invited talk at the Department of Bioorganic Chemistry at Uppsala University on 29th May, 2006 entitled "Conservation and Variation in the Genome: A Balancing Act".
66. Chaired the Bioinformatics Workshop at HGM 2006 at Helsinki, Finland on 1st June, 2006 and delivered Workshop overview entitled "Genome Informatics: Opportunities and Challenges ahead".

67. Delivered a talk at the EU Workshop on International Cooperation in Functional Genomics Research during the HGM 2006 at Helsinki, Finland on 3rd June, 2006 entitled "Functional Genomics: Indian Initiative".
68. Delivered an invited talk at the Human Variome Project meeting at the Session on "Relevance to the Emerging World" at Melbourne, Australia on 22nd June, 2006 entitled "Genotype to Phenotype Correlation (G2P) for Complex Disorder".
69. Delivered an invited talk at the session entitled Genomics in Asia during the 2006 International Conference on Genomics in Hangzhou, China on 25th October, 2006 titled "Genome Variation & Disease Genomics: the Indian Initiative".
70. Delivered lectures at the Pan Asian SNP Data Analysis and Manuscript Writing Meeting at Singapore entitled "Pan Asian SNP Initiative: An Anthropological Perspective" and "Structural Polymorphism in Indian Population" on 9th and 11th November, 2006 respectively.
71. Chaired the Bioinformatics Workshop at HGM 2007 at Montreal, Canada on 22nd May, 2007 and delivered Workshop overview entitled "Genomics Research: What's Next"?
72. Delivered an invited talk at the National Cancer Center, National Institutes of Health, Bethesda titled "MicroRNA mediated regulatory networks: an in-silico approach" on 31st May, 2007
73. Delivered an invited talk at the McKusick-Nathans Institute of Genetic Medicine, Johns Hopkins University, Baltimore titled "Indian Genome Variation database from Complex Disease Perspective" on 1st June, 2007.
74. Delivered an invited talk at the "Genesis" Conference in London titled "Can Open Source Drug Discovery address global healthcare challenges in infectious diseases?" on 21st December, 2008.
75. Delivered a plenary talk at the 7th Human Genome Organization-Pacific Meeting and 8th Asia Pacific Conference on Human Genetics at Cebu, Philippines on 3rd April, 2008 titled "miRNA mediated regulatory network and host pathogen interaction".
76. Delivered talk before Swedish parliamentarians: Open Innovation: A Novel Approach to Collaborative Research for Global Good. 11 November 2009
77. Keynote address: "Genome Sequencing to Drug Discovery: An Open Innovation Model for Global Collaboration" at the HUGO-OECD Symposium on Genomics and Bio-economy(Montpellier, France 17-21 May 2010)
78. Co-Chair of Symposium on "Nutrigenetics and Nutrigenomics" with Prof Jean-Louis Gueant and Co-Chair of Workshop on "Functional Genomics" with Prof Alain Bucheton. 21st May 2010. Part of the Human Genome Meeting (HGM 2010) at Montpellier, France
79. Delivered a Plenary talk on 'Open Source Drug Discovery: a solution for Infectious Diseases' at the International Conference on 'Bioinformatics of Genome Regulation and Structure, being organized by the Institute of Cytology and Genetics of the SB, RAS at Novosibirsk, Russia during 20th to 27th June 2010.
80. Presented perspective of GOI on Technology based applications for development for the benefit of the masses at Washington DC, USA 25 July 2010

In addition to these, Prof. Samir K. Brahmachari has delivered several lectures at various other laboratories and academic institutions.

Complete List of Publications

A. Polypeptides and Proteins

1. Polypeptide models of Collagen. I. Solution properties of (Gly-Pro-Sar) and (Gly-Sar-Pro)_n. V. S. Ananthanaryanan, **Samir K. Brahmachari**, Rao, S. Rapaka and R. S. Bhatnagar.
Biopolymers (1976) 15(4): 707
2. Polypeptide models of Collagen, II. Solution properties of (Pro-Gly-Phe)_n.
Samir K. Brahmachari, V.S. Ananthanaryanan, Rao, S. Rapaka and R.S. Bhatnager.
Biopolymers (1978) 17(9): 2096
3. Structural investigations on Poly-4-hydroxy-L-proline I. Theoretical studies.
M. Bansal, **Samir K. Brahmachari** and V. Sasisekharan.
Macromolecules (1979) 12: 19
4. Structural investigations on Poly-4-hydroxy-L-proline. II. Physico-chemical and X-ray studies.
Samir K. Brahmachari, M. Bansal, V.S. Ananthanaryanan, V. Sasisekharan.
Macromolecules (1978) 12: 23
5. Conformational criteria for the enzymatic hydroxylation of proline in collagen.
Samir K. Brahmachari and V.S. Ananthanaryanan.
Curr. Sci. (1978) 47: 107
6. β -turns in nascent procollagen are sites of post translational enzymatic hydroxylation of proline.
Samir K. Brahmachari and V.S. Ananthanaryanan.
Proc. Natl. Acad. Sci. USA, (1979) 76: 5119
7. Vacuum Ultraviolet Circular dichroism spectrum of β -turn in solution.
Samir K. Brahmachari, V.S. Ananthanaryanan, J. Brahm, S. Brahm, Rao, S. Rapaka and R.S. Bhatnagar.
Biochem. Biophys. Res. Comm. (1979) 86: 605
8. β -turn conformation of N-acetyl-Pro-Gly-Phe-OH in crystal and solution and its relevance to collagen.
V.S. Ananthanaryanan, **Samir K. Brahmachari** and M. Vijayan.
Federation Proc. (1980) 39: 1788
9. Crystal structure and solution studies on N-acetyl-Pro-Gly-Phe-OH.
Samir K. Brahmachari, V.S. Ananthanaryanan, T.N. Bhat, V. Sudhakar, M. Vijayan, Rao, S. Rapaka and R.S. Bhatnagar.
J. Amer. Chem. Soc. (1981) 103: 1703
10. Proline containing β -turns in peptides and proteins. I. Physico-chemical studies on N-acetyl-Pro-Gly-X-OH tri-peptides
Samir K. Brahmachari, V.S. Ananthanaryanan, Rao, S. Rapaka and R.S. Bhatnagar.
Biopolymers (1982) 21: 1208.
11. Proline containing β -turns in peptides and proteins. II. Analysis of globular protein data.
V.S. Ananthanaryanan, **Samir K. Brahmachari** and N. Pattabiraman.
Arch. Biochem. Biophysics (1984) 232: 482

B. Nucleic Acids and Chromatin

12. Site and role of the N-terminal fragment of the nucleosomal core histones in their binding to deoxyribonucleic acid as determined by vibrational spectroscopy.
M. Coupez, Santiere, **Samir K. Brahmachari**, J. Brahm, J. Liquier and E. Taillandier.
Biochemistry (1980) 19: 3358

13. B to Z transition in a DNA fibre: The question of handedness of the duplex.
V. Sasisekharan and **Samir K. Brahmachari**.
Curr. Sci. (1981) 50: 10
14. Conformational flexibility of DNA: A theoretical formalism and a few practical applications.
V.Sasisekharan, Manju Bansal, **Samir K. Brahmachari** and Goutam Gupta.
Biomolecular stereodynamics, ed. R.H. Sarma, Adenine Press, N.Y. (1981) 1: 123
15. Conformation of DNA in chromatin reconstituted from poly(dA-dT) and the core histones.
S. Brahm, **Samir K. Brahmachari**, N. Angelier and J.G.Brahms.
Nucleic Acids Res. (1981) 9: 4879
16. B to Z transition in DNA and its biological implications.
Samir K. Brahmachari, Latha P. Kadalayil, Majumdar, K. and Parnaik, V.K.
Proceedings of INDO-FRG seminar, BARC, (1983) : 106
17. Critical cation balance in B \leftrightarrow Z transition; Role of Li⁺.
Ramesh N. and **Samir K. Brahmachari**.
FEBS lett. (1983) 164: 33
18. Temperature dependent Z \Rightarrow B transitions in Poly (dG-dC).
Latha P. Kadalayil, Majumdar, K. and **Samir K. Brahmachari**.
Curr. Sci, (1983) 52: 907
19. X-ray diffraction studies on Mycobacterium Smegmatis DNA.
Rajagopalan, M., **Samir K. Brahmachari**, V. Sasisekharan and Srivastava R.
Biopolymers (1983) 22(7): 1633
20. Structural organization of the meiotic prophase chromatin in the rat testis.
Rao B.J., **Samir K. Brahmachari** and Rao M.R.S.
J.Biol.chem, (1983) 258:13478
21. A novel structural transition in poly (dG-Me5dC) :Z \leftrightarrow B \leftrightarrow Z.
Latha P.Kadalayil and **Samir K. Brahmachari**.
FEBS lett. (1985) 182:315
22. Left handed DNA in synthetic and topologically constrained form V DNA and its implications in protein recognition.
Shouche, Y.S., Latha P.Kadalayil, Ramesh N., Majumder K., Mandyan V.
and **Samir K. Brahmachari**.
Proc. Int symp. Biomol. Struct Interactions, Suppl. J. Biosciences (1985) 8: 563
23. Poly (dG-dC) in the Z-form inhibits E.Coli DNA polymerase I and AMV DNA polymerase activity.
Samir K. Brahmachari, Ramesh N., M.R.Das and Veena K.Parnaik.
Biochemistry Int. (1985) 11: 281
24. B to Z transitions in DNA and their biological implications.
Latha P.Kadalayil and **Samir K. Brahmachari**.
J.Scientific & Industrial Res. (1986) 45: 521
25. Sequence dependence and role of 5'-phosphate in B to Z transition.
Majumder K., **Samir K. Brahmachari** and V.Sasisekharan.
FEBS lett. (1986) 198: 240
26. Use of volatile buffer at ambient temperature: Versatile approach to the purification of self complementary synthetic deoxyribonucleotides by reverse phase high performance liquid chromatography.
Majumder K., Latha P.Kadalayil and **Samir K. Brahmachari**.
J.Chromatography (1986) 355: 328.
27. Recognition of B and Z forms of DNA by *E. Coli* DNA polymerase.

- Ramesh N., Shouche Y.S. and **Samir K. Brahmachari**.
J.Mol.Biol. (1986) 190: 635
28. DNA structural variability as a factor in gene expression and evolution.
Conrad M., **Samir K. Brahmachari** and V. Sasisekharan.
Biosystems (1986) 19: 123
29. Sequences that adopt non B-form conformation in form V DNA as probed by enzymatic methylation.
Samir K. Brahmachari, Shouche Y.S., Charles R. Cantor and M.McClelland.
J.Mol.Biol. (1987) 193: 201
30. Synthesis and purification of Oligodeoxyribonucleotides: A modified approach.
Kumud Majumder, Latha P.Kadalayil and **Samir K. Brahmachari**.
Curr. Sci. (1987) 56: 693
31. Torsional stress, Unusual DNA structures; and Eukaryotic gene expression.
C. R. Cantor, S. Bandopadhyaya, **Samir K. Brahmachari**, C.F. Hui, M.McClelland, R. Morse and C. L. Smith.
"Unusual DNA structure"; Ed. R.D. Wells and S.C. Harvey. Springer-Verlag, New York, (1988).
32. Sequence specificity of Z-DNA formation in Oligonucleotides.
Latha P.Kadalayil, Kumud Majumder, R. K. Mishra and **Samir K. Brahmachari**.
Biochemistry Int. (1988) 17: 121
33. Interruption of (CG)_n sequences by GG, TG and CA need not prevent B to Z transition in solution.
R.K.Mishra, Latha P. Kadalayil and **Samir K. Brahmachari**.
Nucleic Acids Res. (1988) 16: 4651
34. Synthesis of novel polynucleotide: Potential R-L model.
R.K.Mishra and **Samir K. Brahmachari**.
Curr. Sci. (1988) 57: 574
35. Dynamic nature of B to Z transition: Role of DNA supercoiling and Z-DNA binding protein.
N. Ramesh and **Samir K. Brahmachari**.
Ind. J. Biochem. Biophys. Silver Jubilee issue (1988) 25: 542
36. Sequence criteria for Z-DNA formation: Studies on poly d(ACGT).
Kumud Majumder, Rakesh K. Mishra, Manju Bansal and **Samir K. Brahmachari**.
Nucleic Acids Res. (1989) 17: 450
37. Sequence specificity in supermimic induced structural changes in CG-oligomers.
Kumud Majumder and **Samir K. Brahmachari**.
Biochemistry Int., (1989) 18: 455
38. Structural alteration from non-B to B-form could reflect Dnase I hypersensitivity.
N.Ramesh and **Samir K. Brahmachari**.
J.Biomol.Struc. Dynamics (1989) 6: 899
39. Zintrons in rat alpha-Lactalbumin gene.
G.Meera, N.Ramesh and **Samir K. Brahmachari**.
FEBS lett (1989) 251: 245
40. Preparation of Megabase DNA from adult insects and mammalian spleen for pulse field gel electrophoresis.
Vani Brahmachari, R.Nagasuma and **Samir K. Brahmachari**.
J. Genetics (1989) 68: 185
41. Unusual DNA structures: Sequence requirements and role in transcriptional control.

- Samir K. Brahmachari**, N. Ramesh, Yogesh S. Souche, Rakesh K. Mishra, Rajesh Bagga and G. Meera.
Structures & Methods, Vol 2, Eds.R.H.Sarma & M.H. Sarma. Adenine press (1990)
42. DNA duplex with a potential to change handedness after every half a turn.
Samir K. Brahmachari, Rakesh K.Mishra, Rajesh Bagga and N.Ramesh
Nucleic Acids Res. (1989) 17: 7273
 43. Role of Environment in the Interaction of Nonintercalators with Z-DNA.
K.Ekambareswara Rao, N.Ramesh, D.Chaudhary, **Samir K. Brahmachari** and
V.Sasisekharan
Journal of Biomolecular Structure & Dynamics (1989) 7: 335
 44. Probing of unusual DNA structures in topologically constrained from V DNA:Use of restriction
enzyme as a structural probe.
ShoucheY.S., N.Ramesh and **Samir K. Brahmachari**
Nucleic Acids Res. (1990) 18: 267
 45. Supercoil induced unusual DNA structures as transcriptional block.
Rajesh Bagga, N.Ramesh and **Samir K. Brahmachari**
Nucleic Acids Res. (1990) 18: 3363
 46. Z-DNA Binding Protein Mediated Stabilization of the Z-conformation.
Samir K. Brahmachari, Eugenia T.Paulus, N.Krishnamachary and N.Ramesh
In Protein Structure-Function (1990), Ed.Zaidi, Abbasi & Smith,TWEL Publishers,135
 47. A novel approach to design cis-acting DNA structural elements for regulation of gene expression
in vivo.
P.S.Sarkar,R.Bagga,P.Balagurumoorthy and **Samir K. Brahmachari**
Curr. Sci. (1991) 60: 586
 48. Distribution of simple repetitive (TG/CA)_n and (CT/AG)_n sequences in human and rodent
genome.
Jalaj Tripathi and **Samir K. Brahmachari**
Journal of Biomolecular Structure & Dynamics. (1991) 9:387
 49. Synthetic gene design to investigate the role of cis-acting DNA structural elements in regulation of
gene expression *in vivo*.
Samir K. Brahmachari, P.S.Sarkar, P.Balagurumoorthy, P.Burma and R.Bagga
Nucleic Acids Res., Symp. Series (1991) 24: 163
 50. Hairpin and parallel quartet structures for telomeric sequences.
P.Balagurumoorthy, **Samir K. Brahmachari**, Debasis Mohanty, Manju Bansal and
V.Sasisekharan
Nucleic Acids Res. (1992) 20: 4061
 51. Intramolecular triplex potential sequence within a gene down regulates its expression *in vivo*.
P.S.Sarkar and **Samir K. Brahmachari**
Nucleic Acids Res (1992) 20: 5713
 52. Genome Analysis I: A new approach for visualization of sequence organization in genomes.
P.K.Burma, Alok Raj, Jayant K.Deb and **Samir K. Brahmachari**
Journal of Biosciences (1992) 17: 395
 53. Polypurine-polypyrimidine sequences adopt unwound structure in pBR322 from V DNA as
probed by single-hit analysis of HpaI sites.
R.Bagga and **Samir K. Brahmachari**
Journal of Biomolecular Structure & Dynamics (1993) 10: 879

54. Chaos game representations of similarities and differences between genomic sequences.
S.Baranidharan, B.Sankaranarayanan and **Samir K. Brahmachari**
International Journal of Genome Research (1994) 1: 309
55. Intramolecular DNA triple helix and regulation of gene expression.
Samir K. Brahmachari and P.S.Sarkar
Structural Biology: State of Art 1993, Vol 2, Eds. R.H.Sarma and M.H.Sarma, Adenine press (1994)
56. CA/TG sequence at the 5' end of oligo a-tracts strongly modulates DNA curvature.
Akhilesh K.Nagaich, D.Bhattacharya, **Samir K. Brahmachari** and Manju Bansal
J.Biol.Chem (1994) 269: 7824
57. Structure and Stability of Human Telomeric Sequence.
P.Balagurumoorthy and **Samir K. Brahmachari**
J.Biol.Chem (1994) 269: 21858
58. Synthetic gene design for modulation of gene expression *in vivo*.
Samir K. Brahmachari, Partha S.Sarkar, P.K.Burma, U.S.Shaligram and S.S.Pataskar
Proc. of the Ranbaxy Sym. On Mol. Genetics and Gene therapy,(1995), 85-97
59. Functional significance of simple repetitive sequences in the genome.
Samir K. Brahmachari, G.Meera,Partha S.Sarkar, P.Balagurumoorthy, J.Tripathi, S.Raghavan,
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Patents

S. No.	Title	Inventors	Country (Publicatoin Date)	Filing Date	Grant Date	Patent No.
1.	Computational method for identifying adhesin and adhesin- like proteins of therapeutic potential	Sachdeva Gaurav, Kumar Kaushal, Preti Jain, Brahmachari SK, Ramachandran S	India	29-May-06		
			US	20-Jul-04		
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2.	A computer based method for identifying conserved invariant peptide motifs	Brahmachari SK, Dash D	BR (14-Jan-03)	30-Sep-02		
			CA (11-Oct-01)	07-Dec-01		
			CN	26-Nov-02	20-Jul-05	218305
			CZ (15-May-02)	04-Jan-02		
			EP (02-Jan-03)	31-Aug-00	12-Jan-05	1268512
			EP	26-Feb-02		
			HU (28-May-03)	30-Sep-02		
			India	16-Sep-02		
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			JP (30-Sep-03)	24-Jan-02		
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			RU	12-Jan-02	27-Mar-05	2249044
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WO (17-Feb-05)	31-Aug-00					
3.	A method for predicting an individual's bronchodilatory response to a beta agonist	Somesh Sharma, Kukreti R, Pallav Bhatnagar, Rao CB, Ghosh B, Brahmachari SK, Randeep Guleria	India	10-Dec-04		
			US	28-Apr-04		
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4.	Targets for human micrnas in avian influenza virus (H5N1) genome	Samir Kumar Brahmachari, Manoj Hariharan, Vinod Scaria, Beena Pillai	India	31-Mar-06		
5.	A novel computer based method for identification of candidate proteins useful as anti-infectives	Brahmachari SK, Ramachandran S, Rao CB	US	30-Mar-01		
6.	Novel allelic variant of cyp2c19 associated with drug metabolism	Brahmachari SK, Ravina Fernandes, Sharma Nitin, Suparna Martis, Kukreti R, Mukerji M,	India	15-Jul-04		
			US	15-Jul-05		
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7.	Method of detection of allelic variants of SCA2 gene	Brahmachari SK, Choudhry Shweta, Mukerji Mitali, Jain Satish	US (23-Sep-03)	08-Nov-00	23-Sep-03	6623927
8.	Targets for human micrnas in HIV-1 genome and a method thereof.	Brahmachari SK, Pillai B, Manoj Hariharan	India	10-Oct-05		
9.	Novel primers for screening schizophrenia and a method thereof	Brahmachari SK, Ranjana, Chitra, Salim Q, Jain S	AU	27-Mar-03		
			BR	31-Mar-03		
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			EP	31-Mar-03		
			IL	27-Mar-03		
			India	06-Aug-04		
			JP	28-Mar-03		
			US	21-Mar-02	20-Jul-04	6764824
			WO	25-Mar-02		
10.	A computer based method for predicting protein coding dna sequences useful as drug targets	Brahmachari SK, Dash D, Ramakant Sharma, Jitendra Kumar Maheshwari	India	30-Jun-05		
			US (23-Jun-05)	05-Dec-03		

Software Copyrights Filed

1. Software programme titled "PEPLIB- programme for finding common peptides in different genomes".
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2. Software programme titled "PL-HostFA". (CR-27/2001) filed on 19/12/2001.
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