

Curriculum Vitae

Prof. M.R.S.Rao

(FASc, FNASc, FNA, FAMS, FTWAS)

Present Position and Address: **Honorary Professor and SERB-YOS Chair Professor**
Jawaharlal Nehru Centre for Advanced
Scientific Research (A Deemed University)
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Education:

B.Sc. Bangalore, 1966

M.Sc. Bangalore, 1968

Ph.D. Indian Institute of Science, Bangalore, 1973

Professional Positions:

2019-Present	Honorary Professor and SERB-YOS Chair Professor Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore
2013-2019	Honorary Professor & SERB Distinguished Fellow Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore
2003-2013 (April-Sept)	President, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore
2001-2003	Astra Professor, Indian Institute of Science, Bangalore
1998	Visiting Scientist, Ludwig Institute for Cancer Research, Univ.of California at San Diego
1998-2003	Chairman Department of Biochemistry, Indian Institute of Science, Bangalore
1993	Visiting Professor – 6 months, Harvard Medical School, USA
1998-1990	Visiting Associate Professor – 3 months each year, Harvard Medical School, USA

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1986 (June-Oct)	Research Associate Professor, Baylor College of Medicine, USA
1983 (April-July)	Visiting Assistant Professor, Baylor College of Medicine, USA
1990-1993	Chairman, Centre for Genetic Engineering, Indian Institute of Science, Bangalore
1991-2009	Professor, Indian Institute of Science, Bangalore
1987- 1991	Associate Professor, Indian Institute of Science, Bangalore
1982-1987	Assistant Professor, Indian Institute of Science, Bangalore
1978-1982	Sr. Research Fellow of IISc, Indian Institute of Science, Bangalore
1976-1978	Assistant Professor, Baylor College of Medicine, USA
1975-1976	Instructor, Baylor College of Medicine, USA
1974-1975	Research Associate, Baylor College of Medicine, USA

Membership of Professional Bodies/Societies:

- Member, Society of Biological Chemistry (India), (Hon. Treasurer and Hon. Secretary)
- Member, American Society of Cell Biology
- Member, American Society of Microbiology
- Member, American Society of Biochemistry and Molecular Biology
- Member, Human Genome organization
- President, Society of Biological Chemists (India), 2001-2004, (Two terms)
- Vice President, Indian Academy of Science, Bangalore 2013-2015

Membership in Advisory Boards/Editorial Boards:

- Member, Research Council of IMTECH, Chandigarh 1992-95; 1995-98
- Member, Research Advisory Panel of NII, New Delhi 1993-98, 1999-2003
- Member, Editorial Board (J.Bio Sciences) (Associate Editor), 1988-89
- Member, Editorial Board, Indian J. Biochem. Biophys, 1990-93
- Member, Programme Advisory Committee of DST on Reproductive Biology 1988 -1991
- Member, Programme Advisory Committee of DST on Molecular Biology, 1991 – 1994
- Member, Task Force of DBT on Man Power Development 1994-97
- Member, Sub Committee of Task Force of DBT on Human Genetics 1995-97
- Member, Sectional Committee on Biochemistry of INSA, 1996-1998

Curriculum Vitae

- Convener, Sectional Committee on Biochemistry of INSA, 1999-2001
- Member, Research Council, CCMB, Hyderabad 1998-2000
- Member, Scientific Advisory Committee, CDFD, Hyderabad 1997-99& 2000-2002
- Consulting member of IUBMB to formulate guidelines for Ph.D. degree in Biological Sciences, 1998
- Member, Review Committee on Genetic Manipulation, DBT 1999-2001
- Member, Research Advisory Committee of SPIC Science Foundation, 2000-2004
- Member, Academic Advisory Committee of JNCASR, Bangalore, 2001-2003
- Member, Task Force on Human Genetics and Genome Analysis, DBT, 2000-2002
- Member, Council of Indian Statistical Institute, Calcutta, 2000-2002
- Convenor, Sectional Committee on Interdisciplinary (Biology) of INSA, 2001
- Member, Council of Indian National Science Academy, 1999-2001
- Member, Committee to Restructure the Sectional Committees of INSA, 2001
- **Chairman, Research Council, CCMB, Hyderabad 2001-2003**
- Member, Evaluation Committee of CSIR to assess Scientists 'F', 2001
- Member, Scientific Advisory Committee of Madras Diabetic Research Foundation 2002-2004
- Member, Scientific Advisory Committee on GENOMICS, ICMR, 2001
- Member, Scientific Advisory Committee on Cancer Research, ICMR, 2002
- Member, UGC committee for National Accreditation of University Departments, 2001
- Chairman, Steering Committee of NMITLI project of CSIR on Cancer Genomics
- Member, Editorial Board of Int. Journal of Human Genetics
- Member, Scientific Advisory Committee on Molecular Diagnostics Center of Dabur Research Foundation, 2002-2004
- **Chairman, Organizing Committee of the FAOBMB Congress 2003**
- **Chairman, Research Council, Indian Institute of Chemical Biology, Kolkata 2004-2006**
- **Co-Chairman, Recruitment and Assessment Board, CSIR.**
- Member, Pharmaceuticals R&D Support Fund (PRDSF), DST
- Member, Scientific Advisory Committee of NICED, Kolkata
- Member, Selection/Search Committee of CSIR Directors
- **Chairman, Task Force on Human Genetics and Genome Analysis, DBT: 2003-2005 and 2006-2009**
- Member, Sectional Committee of Biochemistry, INSA 2004-2006
- Member, Sectional Committee of Medicine, Indian Academy of Sciences 2004-2006
- Member, Scientific Council of Indo French Centre for Promotion of Advanced Research (2002-2006)
- Member, Governing Board of IBAB, Bangalore
- Member, Indo-Japan JSPS Science Council

- **Chairman, Indian Joint Working Group for the Indo-US Programme on Contraceptive and Reproductive Health Research, 3 years from 7th July 2004.**
- Member, Scientific Advisory Committee of National Institute of Cholera and Enteric Diseases (under ICMR) - 2005
- Member, CSIR Monitoring Committee of Network Project on Toxicogenomics of polymorphism in Indian population to industrial chemicals for development of biomarkers (2004-2007).
- Member, ICMR National Laboratory Animal Welfare Committee (NLAWAC).
- Member, Governing Council of NCPGR, New Delhi
- Member, Indo-Brazil Science Council
- Member, Board of Dabur Research Foundation
- Member, Swarnajayanti Fellowship Committee (Life Sciences)
- **Member, Board of Governors of Indian Institute of Science Education and Research (IISER), Kolkatta**
- Expert Member, Scientific Advisory committee (Molecular Biology), Bose Institute, Kolkatta.
- Expert Member for the working group under the steering committee on Science and Technology for the formulation of Eleventh Five Year Plan (2007-2012)
- Member, Advisory committee for Medical Biosciences Park, Internaional Centre for Cardio Thoraic and Vascular Diseases, Chennai
- Chairman, Monitoring Committee of Dosha Prakruta project of PSA office.
- **Member, TWAS Prize committee for Biology, 2009-2013**
- **Chairman of the Society and the Governing Board of IISER, Trivandrum, 2010-2012**
- **Member, International Jury for King Faisal Foundation Prize in Biology,2012**
- **Chairman, Sectional Committee on Health Sciences, INSA, 2012-2015**
- **Member, Science and Engineering Research Board (SERB), 2010-2014**
- **Member, Council of Management, Bose Institute, Kolkata, 2014-2019**
- **Member, Karnataka Knowledge Commission, 2014-2017; 2017-2020**
- **Chairman, Basic Medical Sciences, ICMR, 2014-2017**
- Member, Scientific Advisory Group/BMS, ICMR, 2012-2017
- **Member, Vision Group of IFCPAR/CEFIPRA, 2016**
- **Member, Governing Body and Socity of CSIR (2017-2020)**
- **Chairman, DBT Task Force on Human genetics and Genomics (2017-2020)**
- **Chairman, Ramalingaswamy Fellowship selection committee, DBT, 2017-2020.**
- **Member, International Review committee Spanish Government to review Spanish Research Institutes, 2016, 2017 and 2018**
- **Member, J.C.Bose and Ramanujan Fellowship Committee of SERB 2018-2020**

AWARDS & RECOGNITIONS:

- Sarma Memorial Award of S.B.C. (I), 1985
- Elected to Guha Research Conference 1986
- Fellow of Indian Academy of Sciences, 1988
- S.S.Bhatnagar Award of CSIR for Biological Sciences, 1988
- INSA Research Fellowship 1988-90
- Rockefeller Biotechnology Career Fellowship 1988-90
- Fellow of Indian National Science Academy, 1992
- Hon. Senior Fellow, Jawaharlal Nehru Centre for Advanced Scientific Research, 1990.
- Platinum Jubilee Lecture of Indian Science Congress Association, 1991
- Fellow of the National Academy of Sciences, India, Allahabad, 1993
- Eleanor Roosevelt Fellowship of American Cancer Society, 1993
- Senior Associate of National Institute of Advanced Studies, 1996
- Hon. Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, 1998.
- Elected to Council of Indian National Science Academy (1999-2001).
- Ranbaxy Science Foundation Award for Basic Medical Sciences, 1999
- Jawaharlal Nehru Birth Centenary Lecture of INSA for the year 2000
- J.C.Bose Medal of the Indian National Science Academy, 2001
- Sir Mellanby Memorial Lecture of CDRI, Lucknow, 2002
- Elected to Human Genome Organization 2002
- Elected to Third World Academy of Sciences, 2002
- O.P. Bhasin Award for Biotechnology, 2002
- Prof. J. Das Memorial Lecture of Indian Society of Cell Biology 2003
- FICCI Award 2004-05 for the significant work in the category of R&D in Life Sciences
Including Agriculture and Biotechnology
- JC Bose National Fellowship in recognition of outstanding performance and contributions in the area of Life Sciences (2006-16)
- Sir M. Viseveswaraih Senior Scientist State award for the year 2004 for life time contributions for the development of Science and Technology, Government of Karnataka.
- Dr.B.R.Ambedkar Centenary Award for Bio Medical Research of ICMR, 2005
- TWAS Medal Lecture 2008
- Member of Planning Board of Rajiv Gandhi University of Health Sciences, Bangalore
- Dr. Abhijit Guha Oration Lecture of the Indian Society of NeuroOncology 2010
- Fellow of the National Academy of Medical Sciences, India 2011
- Prof. N. Appaji Rao Best Mentor Award for the year 2011.
- Hon. Visiting Professor, Department of Biochemistry, IISc. 2012 to date
- Nuggenahalli Narayana Rao Memorial Lecture, Department of Biochemistry, IISc.2012
- **Distinguished Alumni award of IISc. 2014**

- Goyal Prize 2012-2013
- SERB Distinguished Fellowship, 2014-2017
- SERB-Year of Science Chair Professor-2019-2024

Civilian Honour: PADMASHRI, Govt of India, 2010

Mentorship

Number of students received Ph.D.	40
Number of students received MS	12
Presently working for Ph.D.	3
Number of Postdocs trained	15
Number of Project Assistants trained	>80

Research Areas

Molecular and Cellular Biology
Genomics and Cancer Biology
Molecular genetics of Type II Diabetes
Chromatin Biology
RNA Biology

List of Publications of Prof. M.R.S.Rao

* **Important Publications**

H-Index: 36

Total number of citations: 6200

1. **Rao, M.R.S.,** Padmanaban, G., Muthukrishnan, S. and Sarma, P.S. Feedback inhibition of δ -Aminolaevulinate dehydratase by coproporphyrinogen III *Ind. J. Biochem.* **7**, 132-133 (1970).
2. **Rao, M.R.S.,** Padmanaban, G. and Sarma, P.S. Porphyrin synthesis in drug induced hepatic porphyria *Biochem. Pharmacol* **20**, 2001-2007 (1971).
3. **Rao, M.R.S.,** and Padmanaban, G. δ -Aminolaevulinate synthetase induction and catalase repression by porphrinogenic drugs *Biochem. J.* **122**, 593-595 (1971).
4. ***Rao, M.R.S.,** and Malathi, K. and Padmanaban. G. Relationship between δ -Aminolaevulinate synthetase induction and the concentration of catalase and cytochrome p-450 *Biochem. J.* **127**, 5530559 (1972).
5. Gayathri, A.K., **Rao, M.R.S.,** and Padmanaban, G. Studies on δ -Aminolaevulinate synthetase induction in mouse liver. *Arch. Biochem. Biophys.* **129**, 299-306 (1972)
6. Rajamanickam, C., Amruthavalli, J., **Rao, M.R.S.,** and Padmanaban, G. Effect of hexachlorobenzene on haem synthesis *Biochem. J.* **129**, 381-387 (1972).

7. Gayathri, A.K., **Rao, M.R.S.**, and Padmanaban, G. Drug metabolism in cold exposed animals. *Ind. J. Biochem. Biophys.* **10**, 71-74 (1973).
8. **Rao, M.R.S.**, and Padmanaban, G. Biochemical effects of the porphyrinogenic drug allyl isopropylacetamide *Biochem. J.* **134**, 859-868 (1973).
9. Padmanaban, G., **Rao, M.R.S.**, and Malathi, K. A model for the regulation of δ -Aminolaevulinate synthetase induction in rat liver. *Biochem. J.* **134**, 847-857 (1973).
10. *Rajamanickam, C., **Rao, M.R.S.**, and Padmanaban, G. **On the sequence of reactions leading to cytochrome p-450 synthesis-Effect of drugs.** *J. Biol. Chem.* **250**, 2305-2310 (1975).
11. Sardana, M.K., **Rao, M.R.S.**, and Padmanaban, G. Effect of allyl isopropylacetamide on nuclear RNA synthesis in rat liver *Biochem. J.* **147**, 185-187 (1975).
12. Sakamoto, S., **Rao, M.R.S.**, Spohn, W.H., Wu, B.C., Long, S. and Busch, J. Studies on chromatin and other poly A containing RNA of Novikoff hepatoma ascites cells. *Proc. Am. Soc. Cancer Res.* **16**, 45 (1975).
13. Sakamoto, S., **Rao, M.R.S.**, Wu, B.C., Spohn, W.H. and Busch, H. Characterization of nuclear and chromatin poly A containing RNA. *Physiol. Chem. Phys.* **7**, 309-324 (1975).
14. ***Rao, M.R.S.**, Wu, B.C., Waxman, J. and Busch, H. Rigid structural requirement of the 5'-terminus of mRNA for translational activity. *Biochem. Biophys. Res. Commun.* **66**, 1186-1193 (1975).
15. Busch, H., Choi, Y.C., Daskal, Y., Liarkos, C.D., **Rao, M.R.S.**, Ro-Choi, T.S. and Wu, B.C. Methods for study of messenger RNA. *Methods in Cancer Research.* **13**, 101-197 (1976).
16. Busch, H., Yeoman, L.C., Busch, R.K., Jordan, J.J., **Rao, M.R.S.**, Taylor, C.W., and Wu, B.C. Antigenically active nonhistone chromatin proteins in cancer cells. *Cancer Research* **36**, 3399-3408 (1976).
17. Busch, H., Henning, D., Hirsch, F.W., **Rao, M.R.S.**, Ro-Choi T.S., Spohn, W.H. and Wu, B.C. Structural aspects of low molecular weight RNA and the implications of the 5'-CPA for messenger and protein synthesis. *Molecular Biology of the mammalian Genetic Apparatus* (P. Ts'o, Ed.) p.165 (1976)

18. Busch, H., Henning, D., Hirsch, F.W., **Rao, M.R.S.**, Ro-Choi, T.S., Spohn, W.H. and Wu, B.C. The 5'-cap of LMW and mRNA-its importance in approaches to comparisons of tumor and non-tumor cell function. *Control mechanisms of Cancer* (Criss, W.E., Ono, T. and Sabine, J.R., Eds.) p.241-268 (1976).
19. Wu, B.C., **Rao, M.R.S.**, Kumar, K. and Busch, H. Comparative analysis of ³⁵S-labeled proteins produced in the wheat germ translation system by liver and Novikoff hepatoma mRNA by autoradiography after 2D-gel electrophoresis. *Proc. Am. Soc. Cancer Res.* **17, 13** (1976).
20. Busch, H., Wu, B.C., **Rao, M.R.S.**, Gupta, K.K., Hirsch, F.W. and Spohn, W.H. Evidence for coupled synthesis of rRNA and mRNA for ribosomal proteins in growing cells. *Fed. Proc.* **35, 1582** (1976).
21. Busch, H., Hirsch, F.W., Gupta, K.K., **Rao, M.R.S.**, Spohn, W.H. and Wu, B.C. Structural and functional studies on the 5'-cap. *Progr. Nucl. Acid Res.* **19, p.39-61** (1976).
22. **Rao, M.R.S.**, Hirsch, F.W., Wu, B.C., Spohn, W.H. and Busch, H. Comparative studies on the 5'-cap and *in vitro* translational activity of cytoplasmic and nuclear poly(A)⁺ RNA. *Mol. Cell Biochem.* **7, 3-15** (1977).
23. Wu, B.C., **Rao, M.R.S.**, Gupta, K.K., Rothblum, L.I., Mamrack, P.C. and Busch, H. Evidence for coupled synthesis of mRNA for ribosomal proteins and rRNA. *Cell. Biol. Int. Reports.* **1, 31-44** (1977).
24. **Rao, M.R.S.**, Blackstone, M., Danziger, W. and Busch, H. inhibitory effects on U1-nuclear RNA on translation of messenger RNA in wheat germ cell-free system. *Fed. Proc.* **36, 871** (1977).
25. Busch, H., Wu, B.C., **Rao, M.R.S.**, Gupta, K.K., Hirsch, F.W. and Spohn, W.H. Evidence for coupled synthesis of rRNA for ribosomal protein mRNAs. *J.Cell Biol.* **70, 148** (1976).
26. Hirsh, H.W., **Rao, M.R.S.**, Noll, K., Raju, K.S., Shoss, A.M., Spohn, W.H. and Busch, H. Binding of mRNA of Novikoff hepatoma (NH), normal liver (NL) asnd regenerating rat liver (RL) to cDNA-cellulose. *Proc. Am. Soc. Cancer Res.* **18, 205** (1977).
27. ***Rao, M.R.S.**, Blackstone, M. and Busch, H. Effects of U1 nuclear RNA on translation of mRNA. *Biochemistry*, **16, 2756-2762** (1977).

28. Busch, H., Ballal, N.R., Busch, R.K., Choi, Y.C., Davis, F., Goldknoff, I.L., Mastsui, S.I., **Rao, M.R.S.**, and Rothblum, L.I. Controls of nuclear function in cancer cells. **Mechanisms of Regulation in Morris Hepatomas (Morris, H.P. and Criss, E.F., Eds.) p.314 (1978).**
29. *Busch, H., Ballal, N.R., Busch, R.K., Choi, Y.C., Davis, F.M., Goldknoff, I.L., Rao, M.R.S. and Rothblum, L.I. The nucleolus-A model for analysis of chromatin controls. **Cold Spring Harb. Symp. Quant. Biol. 42, 665-683 (1978).**
30. Busch, H., Ballal, N.R., **Rao, M.R.S.**, Choi, Y.C. and Rothblum, L.I. Factors affecting nucleolar rDNA read outs in **The Cell Nucleus. Vol. V, P.415 (1978).**
31. **Rao, M.R.S.**, Rothblum, L.I. and Busch, H. Presence of elongation factor (EFI) in nuclei and nucleoli of rat liver. **Cell Biol. Int. Rep. 2, 25 (1978).**
32. Rothblum, L.I., Mamrack, P., Durban, E. and **Rao, M.R.S.** Evidence for the presence of protein synthetic factor EFI in the nucleus. **Fed. Proc. 37, 2047 (1978).**
33. **Rao, M.R.S.**, Prasad, V.R., Padmanaban, G. and Ganguly, J. Isolation and characterization of retinol binding protein from the cytosol, nucleosol and chromatin of hen oviduct. **Biochem. J. 183, 501-505 (1979).**
34. Aswani Kumar, **Rao, M.R.S.** and Padmanaban, G. A comparative study of the early effect of phenobarbital and 3-methylcholanthrene on the synthesis and transport of RNA in rat liver. **Biochem. J. 186, 81-87 (1980).**
35. Ganguly, J., **Rao, M.R.S.**, Murthy, S.K. and Sarada, K. Systemic mode of action of vitamin A. **Vitam. Horm. 38, 1-55 (1980).**
36. ***Rao, M.R.S.**, Singh, J. and Ganguly, J. Effect of deprivation of vitamin A on the basic nuclear proteins of rat testes. **Biochem. Biophys. Res. Commun. 54, 108 (1980).**
37. **Rao, M.R.S.**, and Rao, B.J. Histone variant and chromatin structure during spermatogenesis in the rat. International symposium on condensed chromatin and the human X-chromosome, Bangalore, December 1981.
38. **Rao, M.R.S.** Structure and function of eukaryotic chromatin. **J.Sci. Ind. Res. 41, 258-271 (1982).**
39. **Rao, M.R.S.**, Rao, B.J. and Ganguly, J. Localization of testes variant histones on rat testes chromatin. **Biochem. J. 205, 15-21 (1982).**

40. Unni E., **Rao, M.R.S.** and Ganguly, J. Histological and ultrastructural studies on the effect of vitamin A deprivation and subsequent repletion with vitamin A in the rat testes. *Ind. J. Exptl. Biol.* **21**, 180-192 (1983).
41. Prasad, V.R., **Rao, M.R.S.** and Ganguly, J. Cellular retinol binding protein from hen oviduct magnum: Purification and its immunological cross-reactivity with nuclear CRBPs. *Biochem. Biophys. Acta* **748**, 271-177 (1983).
42. *Rao, B.J., Brahmachari, S.K. and **Rao, M.R.S.** Structural organization of the meiotic prophase chromatin in rat testes. *J. Biol. Chem.* **258**, 13478-13485 (1983).
43. **Rao, M.R.S.**, Ann, Y.S., Spohn, W.H., Durban, E., Roll, D. and Busch, H. A novel acidic (pI 4), 19 kDa nucleolar phosphoprotein. *J. Cell Biol.* **97**, 527 (1983).
44. McRorie, D.K., **Rao, M.R.S.**, Goldknoff, I.L., Harty, J.P., Ann, Y.S. and Busch, H. Purification and characterization of a 19 kDa/pI 4.5 nucleolar phosphoprotein. *Biochem. Biophys. Res. Commun.* **122**, 47-55 (1984).
45. Unni, E., Kesari, K.V. and **Rao, M.R.S.** Effect of vitamin A deprivation on the mitotic factor activity in rat testes. *Biochem. Biophys. Res. Commun.* **125**, 454-462 (1984).
46. Prasad, V.R. and **Rao, M.R.S.** CRBP mediates specific uptake of ³H-retinol by hen oviduct nuclei *in vitro*, *Ind. J. Biochem. Biophys.* **22**, 31-35 (1985).
47. Unni, E. and **Rao, M.R.S.** A quantitative study of the germ cells and histone variants present in the testes of vitamin A deficient rats and during subsequent repletion with vitamin A. *J. Biosciences* **1**, 345-358 (1985).
48. *Markose, E.R. and **Rao, M.R.S.** Testis-specific histone H1t is antigenically distinct among histone H1 subtypes. *J. Biol. Chem.* **260**, 16263-16268 (1985).
49. Unni, E. and **Rao, M.R.S.** Androgen binding protein levels and FSH binding to testicular membranes in vitamin A deficient rats and during subsequent repletion with vitamin A. *J. Steroid. Biochem.* **25**, 579-584 (1986).
50. *Behal, A., Prakash, K. and **Rao, M.R.S.** Analysis of the polypeptides associated with nuclear matrix isolated from rat pachytene spermatocytes. *J. Biol. Chem.* **262**, 10898-10902 (1987).
51. *Rao, B.J. and **Rao, M.R.S.** DNase 1 site mapping and MNase digestion of pachytene chromatin reveal novel structural features. *J. Biol. Chem.* **262**, 4472-4476 (1987).

52. *Jagmohan Singh and **Rao, M.R.S.** Interaction of testis specific protein TP1 with nucleic acids, *in vitro*. *J. Biol. Chem.* **262**, 734-740 (1987).
53. Jagmohan Singh and **Rao, M.R.S.** Chromatin organization of sonification resistant spermatid nuclei of rat testes. *Ind. J. Biochem. Biophys.* **24**, 181-188 (1987).
54. Jagmohan Singh and **Rao, M.R.S.** Interaction of testis-specific protein TP2 with isolated nucleosome core particles. *Biochem. Int.* **17**, 701-710 (1988).
55. Satynarayana, K. and **Rao, M.R.S.** **Immunochemical** detection of Z-DNA in rat pachytene spermatocytes. *Exp. Cell Res.* **185**, 319-326 (1989).
56. Satynarayana, K. and **Rao, M.R.S.** Characterization of Poly(ADP-ribosyl)ated domains of rat pachytene chromatin. *Biochem. J.* **261**, 775-786 (1989).
57. Markose, E.R. and **Rao, M.R.S.** Testis-specific histone H1t is truly a testis specific variant and not a meiotic specific variant. *Exp. Cell Res.* **182**, 279-283 (1989).
58. *Heyer, W.D., **Rao, M.R.S.**, Erdile, I., Kelly, T.J. and Kolodner, R.D. An essential *Saccharomyces cerevisiae* single-stranded DNA binding protein is homologous to the large subunit of human RP-A. *EMBO. J.* **9** (7), 2321-2331 (1990).
59. **Rao, M.R.S.** Small Nuclear RNA in Techniques on isolation and characterization of transfer RNAs and other soluble RNAs. *J.D.Cherayil (ed). C.R.C. Press, U.S.A.* 149-164 (1990).
60. *Baskaran, R. and **Rao, M.R.S.** Interaction of spermatid specific protein TP2 with nucleic acids, *in vitro* *J. Biol. Chem.* **265**, 21039-21047. (1990)
61. *Sudhakar, L. and **Rao, M.R.S.** Stage specific changes in the localization of a germ cell specific lamin during mammalian spermatogenesis *J. Biol. Chem.* **265**, 22526-22532. (1990)
62. Sudhakar, L., Sivakumar, N., Behal, A and **Rao, M.R.S.** Evolutionary conservation of a germ cell specific lamin persisting through mammalian spermiogenesis *Exp. Cell Res.* **198**, 78-84. (1991)
63. Baskaran, R. and **Rao, M.R.S.** Mammalian spermatid specific protein TP2 is a Zinc metalloprotein with two finger motifs. *Biochem. Biophys. Res. Commun.* **179**, 1491-1499. (1991)

64. **Rao, M.R.S.**, Sudhakar, L and Bhaskaran, R. Molecular aspects of chromosome behaviour during mammalian spermatogenesis. *Proc. Ind. Natl. Sci. Acad.* **135 B**, 227-242. (1992)
65. **Rao, M.R.S.** Influence of testis-specific proteins on chromosome behaviour during mammalian spermatogenesis. *J. Ind. Inst. Sci.* **73**, 93-100. (1993)
66. Lakshmi Ramachandra, Radha Ramadevi and **Rao, M.R.S.** An 18 mer sequence in a rat 1.3 kb EcoR I repeat detects genetic polymorphism in humans. *Curr. Sci.* **65**, 569-570.(1993)
67. **Rao, M.R.S.**, Lakshmi Ramachandra and Manjula, K. Chromosome behaviour during meiosis. *J. Ind. Inst. Sci.* **73**, 227-235.(1993)
68. *Fischel, R., Lescoe, M.K., **Rao, M.R.S.**, Copeland, N.G., Jenkins, N.A., Garber, J., Kane, M. and Kolodner, R.D. The Human Mutator Gene Homolog MSH2 and its association with Hereditary Nonpolyposis colon cancer. *Cell*, **75**. 1027-1038. (1993) (NUMBER OF CITATIONS for this paper 2663) One of the Citaion Classics in the area of Cancer Genetics
69. Tapas Kumar Kundu and **Rao, M.R.S.** Characterization of the zinc-metalloprotein nature of rat spermatidal protein TP2. *FEBS Lett.* **351**, 6-10. (1994)
70. Manjula, K., Karande, A. and **Rao, M.R.S.** Behaviour of the germ cell specific lamin through mammalian spermatogenesis as probed with monoclonal antibodies. *Cell. Struct. Funct.* **19**. 207-218. (1994)
71. Khadake, J.R., Markose, E.R. and **Rao, M.R.S.** Testis-specific histone (H1t) is not phoshorylated and has a weak interaction with chromatin. *Ind. J. Biochem. Biophys.* **31**, 335-338. (1994)
72. *Lakshmi Ramachandra and **Rao, M.R.S.** Identification and sequence characterizastion of a 1.3 kb EcoRI repeat fragment that harbours a DNA repair site of rat pachytene spermatocytes. *Chromosoma*, **103**. 486-501. (1994)
73. *Kolodner, R., Hall, N.R., Lipford, J., Kane, M.F., **Rao, M.R.S. et.al.** Structure of the human MSH2 locus and analysis of two Muir-Torre kindreds for MSH2 mutation. *Genomics*, **24**. 546-554. (1994)
74. *Kolodner, R., Hall, N.R., Lipford, J., Kane, M.F., **Rao, M.R.S. et.al.** The human Mismatch Repair genes and their association with Hereditary Non- Polyposis Colon Cancer. *Cold Spring Harbor Symp. Quant. Biol.* **59**, 331-338. (1994)

75. *Kundu, T.K. and **Rao, M.R.S.** DNA condensation by the Rat Spermatidal protein TP2 shows GC rich sequence preference and is zinc dependent. *Biochemistry*, **34**, 5143-5150. (1995)
76. Fishel, R., Lescoe, M.K., Ewel, A., Lee, S., Griffith, J., Morrison, P., Wirth, L., Lipford, J., Kane, M.F., **Rao, M.R.S.** et.al. The Human Mutator gene homologs and Hereditary Non-Polyposis Colon Cancer. *Accomplishments in Cancer Research*. (1995). **25**, 310-325
77. *Khadake, J.R. and **Rao, M.R.S.** DNA and chromatin condensation properties of rat testes H1a and H1t compared to those of rat liver H1bdec: H1t is a poor condenser of chromatin. *Biochemistry*, **34**, 15792-15801. (1995)
78. Samir Acharya, Choudary, N.R. and **Rao, M.R.S.** Characterization of a DNA pairing activity copurifying with DNA ligase in a partially purified extract from rat testes. *Biochim. Biophys. Acta*. **1309**, 131-146. (1996)
79. Manjula. K. and **Rao, M.R.S.** What makes a cell tick? The A, B and C of the matter. *Curr. Sci.* **70**, 441-445.(1996)
80. Geeta Vani, R. and **Rao, M.R.S.** Mismatch repair genes of eukaryotes. *J. Genetics*. **75**, 181-192.(1996)
81. Amom Ruhikanta Meetei and **Rao, M.R.S.** Cloning of cDNA encoding rat spermatidal protein TP2 and its expression in E.coli. *Protein Expr. Purif.* **8**, 409-415. (1996)
82. Geeta Vani, R. and **Rao, M.R.S.** Cloning of the rat homologue of mismatch repair gene MSH2 and its expression during spermatogenesis. *Gene* **185**, 19-26. (1997).
83. *Kundu, T.K. and **Rao, M.R.S.** Zinc-dependent recognition of CpG island sequence by the rat testis transition protein TP2. *Biochemistry* **35**, 15626-15632.(1996)
84. *Khadake, J.R., and **Rao, M.R.S.** Condensation of DNA and H1-depleted chromatin by an octapeptide repeat motif KS(T)PKKAKK present in the c-terminus of histone H1. *Biochemistry* **36**, 1041-1051 (1997).
85. Khadake, J.R. and **Rao, M.R.S.** Preferential condensation of SAR-DNA by histone H1 and its SPKK containing octapeptide repeat motif. *FEBS Lett.* **400**, 183-186. (1997)
86. Sreenivas Bharath, M.M., Khadake, J.R. and **Rao, M.R.S.** Expression of Rat histone H1d in *E.coli* and its purification. *Prot. Expr. Purif.* **12**, 38-44. (1998)

87. Amom Ruhikanta Meetei and **Rao, M.R.S.** Hyperexpression of rat spermatidal protein TP2 in *E.coli* by codon optimization and engineering the vector encoded 5' UTR. *Prot. Expr. Purif.* **13, 184-190. (1998)**
88. Amom Ruhikanta Meetei and **Rao, M.R.S.** Generation of multiple site- specific mutations in a single Polymerase Chain Reaction product. *Anal. Biochem.* **264, 288-291 (1998)**
89. T.K. Kundu and **Rao, M.R.S.** CpG islands in chromatin organization and Gene Expression. *J.Biochem.* **125, 217-222 (1999)**
90. *R. Geeta Vani, C.M. Varghese and **Rao, M.R.S.** Cloning of Rat MLH1 and expression analysis of MSH2, MSH3, MSH6 and MLH1 during Spermatogenesis. *Genomics* (2000) **62,460-467**
91. *Amom Ruhikanta Meetei, Ullas K.S. and **Rao, M.R.S.** Identification of two novel zinc finger modules in spermatidal protein by site directed mutagenesis. *J. Biol. Chem.*(2000) **275, 38500-38507**
92. Amom Ruhikanta Meetei and **Rao, M.R.S.** Method for multiple site directed mutagenesis. *Methods in Molecular Biology* (2002) **182, 95-102**
93. Ashok Gopinath, R. Gadagkar and **Rao, M.R.S.** Identification of polymorphic microsatellite markers in wingless ant *Diacamma Ceyloenense*. *Molecular Ecology Notes* (2001) **1, 126-127**
94. *Amom Ruhikanta Meetei, Ullas, K.S., Vasupradha, V and **Rao, M.R.S.** Involvement of protein kinase A in the phosphorylation of spermatidal protein TP2 and its effect on DNA condensation. *Biochemistry* (2002) **41, 185-195**
95. *Debjani Haldar, Samir Acharya and **Rao, M.R.S.** A novel structure-specific endonuclease activity associated with polypyrimidine tract binding (PTB) related protein from rat testis. *Biochemistry* (2002) **41, 11628-11641**
96. *Srinivas Bharath, Nagasuma Chandra and **Rao, M.R.S.** Prediction of a HMG-box fold in the C-terminus of histone H1: Insights into its role in DNA condensation. *Protein Structure Function and Genetics* (2002) **49, 71-81**
97. *Srinivas Bharath, Sneha Ramesh, Nagasuma Chandra and **Rao, M.R.S.** Identification of a 34 amino acid stretch in the C-terminus of histone H1 as the DNA condensing domain by site directed mutagenesis. *Biochemistry* (2002) **41,7617-7627**

98. *Srinivas Bharath, M.M., Nagasuma Chandra and **Rao, M.R.S.** Molecular modeling of the Chromatosome particle. *Nucl. Acids Res.* (2003) **31, 4264-4274**
99. Devgan, V., Thomas, M., Ullas, K.S., **Rao, M.R.S.** and Seshagiri, P.B. Embryo culture based generation of enhanced green protein-transgenic mice. *Biochem.Biohyps. Res. Commun.* (2003) **303, 994-1001**
100. *Ullas, K.S., and **Rao, M.R.S.** Phosphorylation of Rat spermatidal protein TP2 by sperm-specific protein kinase A and modulation of its transport into the haploid nucleus. *J. Biol. Chem.* (2003) **278, 52673-52680.**
101. Devgan, V., **Rao, M.R.S.** and Seshagiri, P.B. Impact of embryonic expression of enhanced green fluorescent protein on early mouse development. *Biochem. Biophys. Res. Commun.* (2004) **313, 1030-1036.**
102. *Nishant, K.T., Ravishanaker, H., and **Rao, M.R.S.** Characterization of a mouse recombination hotspot locus encoding a novel non-protein coding RNA *Mol.Cell. Biol.*(2004) **24, 5620-5634.**
103. Vimalaswaran, K.S., Venkatesan, R., Ghosh, S., Majumdar, P.P., Raj, D., Sathish Babu, H.N., **Rao, M.R.S.**, and Mohan, V., Peroxisome proliferative –activated receptor-gamma coactivator-1 alpha (PGC-1) gene polymorphisms and their relationship to Type 2 diabetes in Asian Indians. *Diabetic Medicine* (2005) **22, 1516-1521**
104. *Somasundaram, K., Reddy, P.S., Katyayni, V., Britto, R., Subbarayan, M., Nambiar, S., Aparna, H., Samuel, C., Setty, M. Sreepati, H.K., Santhosh, V., Hegde, A.S. Hegde, S. Kondaiah, P., and **Rao M.R.S.**, Upregulation of ASCL1 and inhibition of Notch signalling pathway characterize Progressive Astrocytoma. *Oncogene* (2005) **24, 7073-7083**
105. Nishant, K.T., and **Rao M.R.S.** Molecular features associated with Meiotic recombination hotspots. *Bio Essays* (2006) **28, 45-56**
106. Nishant, K.T., Chetan Kumar and **Rao, M.R.S.**, A Database of Human Recombination hotspots. *Nucl. Acids Res.* (2006) **34, D25-D28**
107. Ramprasad, S., Radha, V., Mathias, R.A., Majumder, P.P., **Rao, M.R.S.** and Mohan, V. RAGE gene promoter polymorphism and diabetic retinopathy in a clinic based population from South India. *EYE* (2006) **21 (3) 395-401**

108. Vimalaewaran, K.S., Radha, V., Mohan, A., Deepa Raj., Ghosh, S., Majumder, P.P., **Rao, M.R.S.** and Mohan, V. Effect of polymorphism in the PGC C 1 alpha gene on body fat distribution in Asian Indians. *Int. J. Obesity* (2006) 30 (6) 884-891
109. Radha, V., Vimalaewaran, K.S., Babu, S., Abate, N., Chandalia, M., Satija, P., Grundy, S.M., Ghosh, S., Majumder, P.P., Deepa, R., **Rao, M.R.S.** and Mohan, V. Role of genetic polymorphism PPAR-gamma2 Pro12Ala on Ethnic susceptibility to Diabetes of South Asians and Caucasians: Evidence for heterogeneity. *Diabetes Care* (2006) 29, 1046-1051
110. Bodhini, D., Radha, V., Deepa, R., Ghosh, S., Majumder, P.P., **Rao, M.R.S.** and Mohan, V. The prevalent *G1057D* polymorphism of *IRS 2*Gene and its relationship with obesity I susceptibility to Type 2 diabetes in Asian Indians. *Int. J. Obesity* (2007) 31, 97-102
111. Pradeepa, M.M. and **Rao, M.R.S.** Chromatin remodeling during mammalian spermatogenesis: Role of testis specific histone variants and transition proteins. *Soc.Reprod.Fertil.Suppl.*(2007);63:1-10.
112. Agrawal, S., Chetan Kumar and **Rao, M.R.S.** CREMOFAC-A database of chromatin remodeling factors. *Bioinformatics* (2006) 22, 2934-2939
113. Ramesh, S., Srinivas Bharath, M.M., Chandra, N.R. and **Rao, M.R.S.** A K52Q substitution in the globular domain of histone H1t modulates its nucleosome binding properties. *FEBS Letters* (2006) 58, 5999-6006
114. Ramesha, K.P., Gowda, S., Chandra, N.R. and **Rao, M.R.S.** Single nucleotide polymorphisms in alpha-lactalbumin gene in cattle and their effect in the mature protein .(2006) *Indian Journal of Animal Sciences* 76, 816-820
115. Radha, V., K., Vimalaewaran, K.S., Babu, S., Deepa, R., Anjana, M., Ghosh, S., Majumder, P.P., **Rao, M.R.S.** and Mohan, V. Lack of association between serum adiponectin levels and the Pro12Ala polymorphism in Asian Indians (2007) *Diabetic Medicine* 24 (4), 398-402
116. Shivaraj Gowda, Kumaran, M., and **Rao M.R.S.** Single nucleotide polymorphism analysis of the Nucleotide Excision Repair Genes XPC, XPA and XPG in an Indian population. (2007) *Human Biology*, 79(5),545-562

117. Jayashree, L and **M.R.S.Rao** Acheaute schute homolog 1 in glioma. *Atlas of Genetics and Cytogenetics in Oncology and Hematology*, (2007)
URL:<http://AtlasGeneticsOncology.org/Genes/ASCL11D713ch12q23.html>
118. *Pradeepa, M.M., Manjunatha, S., Sathish, V., Agrawal, S. and **Rao. M.R.S.** Involvement of importin 4 in the transport of transition protein 2 into spermatid nucleus. (2008) *Mol. Cell Biol.* **28(13)**, 4331-4341
119. *Reddy, P.S., Britoo, R., Katyayni, V., Aparna, H., Sreepathi, H.K., Samuel, C., Shetty, M., Tandon, A., Hegde, S., Hegde, A.S., Santosh, V., Kondaiah, P., Somasundaram, K and **Rao, M.R.S.** Novel glioblastoma markers with diagnostic and prognostic value identified through transcriptome analysis. (2008) *Clin. Cancer Res.* **14 (10)**, 2978-2987
120. Reddy P.S., Umesh, S., Thota, B., Tandon, A., Pandey, P., Hegde, A.S., Balasubramaniam, A., Chandramouli, B.A., Santosh, V., **Rao, M.R.S.**, Kondaiah, P and Somasundram, K. PEBF1/NAmPRTase/Visfatin: A potential malignant astrocytoma/glioblastoma serum marker with prognostic value. (2008) *Cancer Biology and Therapy* **7**, 665-670
121. Surbhi Dhar, Pradeepa, M.M. and **Rao, M.R.S.** Emerging concepts of chromatin remodeling in modulating genome functions. (2007) *Proc. Nat. Acad. Sci, India* **77(B)** 61-71
122. *Gayatri, G and **Rao, M.R.S.** A novel non-coding RNA processed by Drosha restricted to nucleus in mouse. (2008) *RNA*, **14**, 1399-1410
123. Vimalaswaran, K.S., Radha, V., Ramya, K., Satish Babu, H.N., Savitha, N., Roopa, V., Monalisa, D., Deepa, R., Ghosh, S., Majumdar, P.P. **Rao, M.R.S.** and Mohan V. A novel association of a polymorphism in the first intron of adiponectin gene with Type 2 Diabetes, Obesity and Hypoadiponectinemia in Asian Indians. (2008) *Human Genetics*, **123(6)** 599-605
124. Ullas KS, Pradeepa MM, Nikhil G, Rammohan N, **Rao MR.S** Spatiotemporal Organization of AT and GC Rich DNA and Their Association With Transition Proteins TP1 and TP2 in Rat Condensing Spermatids.(2009) *J Histochem Cytochem.* **57**, 951-962
125. Keerthi, T.C., Gayatri, G., and **Rao, M.R.S.** Identification of a novel nucleolin variant (NLP) gene expressed during rat spermatogenesis *BMC Mol. Biol.* (2009) **10:64**
126. *Pradeepa M.M., Gupta Nilhil., Harikishore, A., Bharath, G.N., Kundu, T.K. and **Rao, M.R.S.** Acetylation of transition protein 2 (TP2) by KAT3B (p300) alters its DNA

- condensation property and interaction with histone chaperone NPM3. *J. Biol. Chem.* (2009) 284, 29956-29967
127. Vimalleswaran, K.S., Radha, V., Jayapriaya, M.G., Ghosh, S., Majumder, P.P., Rao, M.R., and Mohan, V. Evidence for an association with type 2 diabetes mellitus at the PPARG locus in South Indian population. (2010) *Metabolism* 59 (4), 457-462
128. Vimalleswaran, K.S., Radha, V., Ghosh, S., Majumder, P.P., Rao, M.R.S. and Mohan, V. A haplotype at the UCP1 gene locus contributes to genetic risk for type 2 diabetes in Asian Indians (CURES-72) (2009) *Metabolic syndrome and related Disorders*. 8, 49-54
129. *Jayashree Ladha, Sainitin Donakonda, Shipra Agrawal, Balaram Thota, M.R. Srividya, S.Sridevi, A. Arivazhagan, K. Thennarasu, Anandh Balasubramaniam, B.A. Chandramouli, A.S. Hegde, Paturu Kondaiah, Kumaravel Somasundaram, Vani Santosh and **M R S Rao** .Glioblastoma specific protein interaction network identifies PPIA and CSK21 as connecting molecules between cell cycle associated genes. (2010) *Cancer Research* 70, 6437-6447
130. *Santosh, V., Arivazhagan, A., Sreekantha Reddy, P., Srinivasan, H., Thota, B., Srividya, M.R., Vrinda, M., Sridevi, S., Shailaja, B.C., Samuel, C., Prasanna, K.V., Thennarasu, K., Balasubramaniam, A., Chandramouli, B.A., Hegde, A.S., Somasundaram, K., Kondaiah, P., and **Rao, M.R.S.** Grade specific expression of IGFBP-2, -3 and -5 in astrocytomas: IGFBP3 emerges as a strong predictor of survival in patients with newly diagnosed glioblastoma (2010) *Cancer Epidemiology, Biomarkers and Prevention* 19(6), 1399-1408
131. *P. Sreekanth Reddy, Harish Srinivasan, S Sridevi, M Vrinda, A Arivazhagan, Anandh Balasubramaniam, A. S. Hegde, B. A. Chandramouli, Vani Santosh, **Rao, M.R.S.**, Paturu Kondaiah and Kumaravel Somasundaram Identification of potential serum biomarkers of glioblastoma: Serum osteopontin levels correlate with poor prognosis (2010) *Cancer Epidemiology, Biomarkers and Prevention* 19(6), 1409-1422
132. Agrawal, S., Nishant, K.T. and **Rao, M.R.S.** Analysis of Meiotic Recombination Hotspots Bioinformatic approach. In *A Practical Guide to Bioinformatics Analysis*. iConcept Press. (2010) pp. 133-149
133. K.S. Vimalleswaran, V. Radha, S. Ghosh, Partha P. Majumder, **Rao, M.R.S.** and V. Mohan *Uncoupling Protein 2 and 3 Gene Polymorphisms and Their Association with Type 2 Diabetes in Asian Indians* *Diabetes Technology & Therapeutics*, (2011) 13(1): 19-25.
134. Bodhini D, Radha V, Ghosh S, Sanapala KR, Majumder PP, **Rao MR**, Mohan V. Association of Calpain 10 gene polymorphism with Type 2 Diabetes mellitus in Southern Indians *Metabolism*. (2011) 60(5):681-688.

135. Shipra Agrawal and M.R.S. Rao Biological Network, Disease Mechanism Network. **In Encyclopedia of Systems Biology, Springer Press (2013) pp. 113-118**
136. Shipra Agrawal and M.R.S. Rao Functional / Signature Network Module for Target Pathway Gene Discovery. **In Encyclopedia of Systems Biology, Springer Press (2013) pp. 773-778**
137. Bodhini D, Radha V, Ghosh S, Majumder PP, Rao MR, Mohan V. Glut 4 Gene polymorphisms and their association with Type 2 Diabetes in South Asians **Diabetes Technol Ther. (2011) 13**, 913-920.
138. *Dehnugara T, Dhar, S. and Rao M.R.S. An *in vitro* short term culture method for mammalian haploid round spermatids amenable for molecular manipulation. **Mol. Reprod. Dev. (2012) 79**, 19-30
139. *Arivazhagan A, Durairaj MK, Vinay S, Sridevi S, Thota B, Srividya MR, Irene RP, Prasanna K, Thennarasu K Mondal N, Hegde AS, Chandramouli BA, Santosh V, Rao MRS, Kondaiah P and Somasundaram K. : Higher TOP2A levels predict better prognosis in GBM patients receiving Temozolamide chemotherapy: Identification of temozolamide as a Topo 2A inhibitor. **Journal of Neuro-oncology (2012) 107**, 289-297
140. *Dhar, S., Thota, A. and Rao M.R.S. Insights into the role of Bromodomain testis-specific(Brdt) in acetylated histone H4 dependent chromatin remodeling in mammalian spermiogenesis. **J. Biol. Chem. (2012) 287**, 6387-6405
141. Bodhini, D., Sandhiya, M., Ghosh, S., Majumder, P.P., Rao, M.R.S., Mohan, V., and Venkatesan, R. Association of His 1085 *INSR* gene polymorphism with Type 2 diabetes in south Indians. **Diabetes Technol Ther. (2012) 14(8)** 696-700
142. *Gayatri, G., Akhade, V.S., Donakonda, S. and Rao, M.R.S. Mrhl, a long non-coding RNA, negatively regulates wnt signaling through its protein partner Ddx5/p68 in mouse spermatogonial cells. **Mol Cell. Biol. (2012) 32 (15)**, 3140-3152
143. *Ladha, J., Sinha, S., Bhat, V., Donakonda, S. and Rao, M.R.S. Identification of genomic targets of transcription factor AEBP1 and its role in survival of glioma cells. **Mol. Cancer Res. (2012) 10**, 1039-1051
144. Rao, M.R.S. Disease Biology in the coming decade(s): Commentary in **Annals of Neurosciences (2012) 19**, 149-150
145. Sinha, S., Donakonda, S. and Rao, M.R.S. Analysis of in vivo occupancy of Aebp1, a transcription factor, using high resolution tiling array. **Methods in Molecular Biology, (2013)**, 1067, 168-184

146. *Arivazhagan A, Somasundaram K, Thennarasu K, Sreekanthreddy P, Srinivasan H, Shailaja BC, Samuel C, Patric IRP, Shukla S, Thota B, Prasanna KV, Pandey P, Anandh B, Santosh V, Chandramouli BA, Hegde AS, Kondaiiah P and **Rao MRS** A Fourteen gene GBM prognostic signature identifies association of immune response pathway and mesenchymal subtypes with high risk group. **PLoS One (2013) 8(4);c62042. Doi:10:1371/Journal.pone.0062042**
147. *Rao, S.A.M., Srinivasan, S., Patric, I.R.A., Hegde, A.S., Chadramouli, B.A., Arivazhagan, A., Santosh,V., Kondaiiah, P., **Rao, M.R.S.**, and Somasundaram, K. A 16-gene signature distinguishes anaplastic astrocytoma from glioblastoma. **PLOS One (2014) 9(11): e8500.doi. 10.1371/Journal.pone.0085200.**
148. *Pentakota,S.K., Sankaran,S., Sikarwar,A.P., Chandra, N and **Rao, M.R.S.** Mapping POA translational modification of mammalian testicular specific histone variant TH2B in tetraploid and haploid germ cells. **(2014) J. Proteome Res. 13 (12), 5603-5617 (2014)**
149. *Akhade, V.S., Arun, G., Donakonda, S., and **Rao, M.R.S.** Genome wide chromatin occupancy of mrhl RNA and its role in gene regulation in spermatogonial cells **(2014) RNA Biology; 11(10), 1262-1279 (2014)**
150. *Gupta, N., Pradeepa, M.M., Bhat, A. and **Rao, M.R.S** Mapping of Post-translational Modifications of Transition Proteins, TP1 and TP2, and Identification of Protein arginine Methyltransferase 4 and Lysine Methyltransferase 7 as Methyltransferase for TP2 **J. Biol. Chem. 290, 12101-12122 (2015).**
151. Roshan Fatima, Akhade, V.S., Debosree Pal and **Rao, M.R.S.** Long non-coding RNAs in Development and Cancer: Potential Biomarkers and Therapeutic targets **Molecular and Cellular Therapies 3:5 (2015)**
152. Mishra, L.N., Gupta, N. and **Rao M.R.S.** Mapping of post-translational modifications of spermatid-specific linker histone H1-like protein, HILS1. **Journal of Proteomics 128, 218-230 (2015)**
153. *Akhade, V.S., Dighe, S.N., Shubhangini,T. and **Rao, M.R.S.** Mechanism of Wnt signalling induced down regulation of mrhl long non coding RNA in mouse spermatogonial cells **Nucleic Acids Research 44(1), 387-401 (2016)**
154. Gupta, N., Pentakota, S., Mishra, L.N., Jones, R and **Rao, M.R.S.** Identification of Posttranslational Modifications of Endogenous Chromatin Proteins from Testicular Cells by Mass Spectrometry **Methods in Enzymology 586, 115-142 (2017)**
155. Kataruka, S., Akhade, V.S., Kayyar, B. and **Rao, M.R.S.** Mrhl long non coding RNA mediates meiotic commitment of mouse spermatogonial cells by regulating Sox 8 expression. **Molecular and Cellular Biology 37 (14), 2017; e00632-16**

156. Donakonda, S., Sinha, S., Dighe, S., and **Rao, M.R.S.** System analysis identifies distinct and common functional networks governed by transcription factor ASCL1, in glioma and small cell lung cancer.
Mol Biosyst. 2017 Jul 25;13(8):1481-1494.
157. Debosree Pal and **Rao, M.R.S.** Long non coding RNAs in pluripotency of stem cells and cell fate specification.
Adv Exp Med Biol. 2017; 1008:223-252.
158. DDX5/p68 associated lncRNA LOC284454 is differentially expressed in human cancers and modulates gene expression.
Das M, Renganathan A, Dighe SN, Bhaduri U, Shettar A, Mukherjee G, Kondaiah P, and **Rao, M.R.S.**
RNA Biol. 2017 Dec 11:1-17.
159. Spermatid-specific linker histone HILS1 is a poor condenser of DNA and chromatin and preferentially associates with LINE L1 elements.
Mishra, L.N., Gupta, N., Shalini, V., Kritika, G., Suthat, N., Bhaduri, U. and **Rao.M.R.S.**
Epigenetics and Chromatin 2018, 11:43
160. Long Noncoding RNA Biology, 2017 (**Rao.M.R.S. Editor, Springer**)
161. AEBP1 down regulation induced cell death pathway depends on PTEN status of glioma cells.
Sinha, S., Renganathan, A., Nagendra, P.B., Bhat, V., Mathew, B and **Rao, M.R.S**
Scientific Reports 2019, 9:14577
162. TH2BS11ph histone mark is enriched in the unsynapsed axes of the XY body and predominantly associated with H3K4me3-containing genomic regions in mammalian spermatocytes.
Mahadevan, I.A., Pentakota, S., Roy, R., Bhaduri, U., and **Rao, M.R.S**
Epigenetics and Chromatin 2019, 12:53
163. A novel enhancer RNA, Hmrhl, positively regulates its host gene, phkb, in chronic myelogenous leukemia
Fatima, R., Choudhury, S.R, Divya, T.R., Bhaduri, U., and **Rao, M.R.S.**
Non-coding RNA Research 2019:4, 96-108

164. Linker histone variant H1t is closely associated with repressed repeat element chromatin domains in pachytene spermatocytes.
Mahadevan I.A., Kumar, S. and **Rao, M.R.S.**
Epigenetics and Chromatin (2020) 13:9
165. LncRNA, *Mrhl*, orchestrates differentiation programs in mouse embryonic stem cells through chromatin mediated regulation.
Pal, D., Neha, C.V. , Bhaduri, U., Zenia, Z., , Dutta, S., Chidambaram, C. and **Rao, M.R.S.**
Stem Cell Research (Under Revision)
166. Genome wide occupancy of reveals the localization of H1T2 (H1fnt) to repeat regions and a subset of transcriptionally active chromatin domains of rat spermatids.
Shalini, V., Bhaduri, U. and **Rao, M.R.S.**
Epigenetics and Chromatin (2021) 14:3