

CURRICULUM VITAE

NAME DR. (MRS). RANJU RALHAN
DATE OF BIRTH 28th April ,1955
POSITION HELD/DESIGNATION Professor
ADDRESS (A) OFFICIAL: Department of Biochemistry
All India Institute of Medical Sciences
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ACADEMIC QUALIFICATIONS:

Degree	University / Institute	Duration	Division	Rank in University
B.Sc (Hons) Chemistry	University of Delhi	1971-1974	First	3 rd position Merit Prize
M.Sc.	Postgraduate Institute of Medical Education and Research, Chandigarh.	1974-1976	First	1 st position Merit Prize
Ph.D.	V.P. Chest Institute, University of Delhi	1976-1980	Thesis Regulation of Glycolysis in Mycobacteria	-

POSITIONS HELD

Year	Till date	Position
2003	2003	Professor, Department of Biochemistry, AIIMS
1995	2003	Additional Professor, Department of Biochemistry, AIIMS.
1991	1995	Associate Professor, Department of Biochemistry, AIIMS.
1987	1991	Assistant Professor, Department of Biochemistry, AIIMS.
1986	1987	CSIR Pool Officer, Department of Biochemistry, AIIMS.
1984	1986	Fogarty Post-Doctoral Fellow. National Cancer Institute, National Institutes of Health, MD, USA.
1982	1984	Research Officer, National Institute of Immunology, New Delhi.
1980	1981	CSIR Post Doctoral Fellow, Cancer Research Institute, Bombay.
1976	1980	CSIR Senior Research Fellow and National Science Talent Scholar. V.P. Chest Institute, Delhi.

AWARDS / HONOURS

1. **Fellow of National Academy of Medical Sciences**
2. **Dr. P.N. Raju Oration Award** for Cancer of ICMR for 2001
3. Best Research Paper in American Society of Clinical Oncology-Pan Asia Cancer Conference (APACC) in 2002.
4. **“Sandoz Award for Cancer” Oration** of ICMR for 1996.
5. “Faculty Fellow of International Congress on Oral Cancer” Nominated and elected by Faculty Fellows of International Congress on Oral Cancer.
6. Best Poster of Day Award in 6th International Congress on Oral Cancer.
7. First Prize in recognition of Merit - M.Sc. (Biochemistry) awarded by PGIMER 1976.
8. Merit Prize - B.Sc. (Hons.) Chemistry Part I awarded by University of Delhi 1971.
9. Merit Prize - B.Sc. (Hons.) Chemistry Part II awarded by University of Delhi 1972.
10. National Science Talent Scholarship awarded by N.C.E.R.T for the period 1971-1978.

Awards for Research Work Carried Out Under My Guidance (18)

1. **Sitaram Joglekar Award** for best oral presentation during XXIV Annual Convention of Indian Association for Cancer Research in 2005 to Rinu Sharma
2. **Special Appreciation Award** for Best Poster during XXIV Annual Convention of Indian Association for Cancer Research in 2005 to Meenakshi Sawhney
3. **Geeta Mittal Gold Medal** and Book Prize for Best Clinical Research, AIIMS, 2003 to Jatinder Kaur.
4. **Geeta Mittal Gold Medal** and Book Prize for Best Clinical Research, AIIMS, 2002 to Shilpi Soni.
5. **Shri Mohan Lal Wig Gold Medal** for Best Clinical Research, AIIMS, 2002 to Nitin Chakravarti.
6. **Best Poster of Day** awarded to Miss Nidhi Rohatgi World Assembly on Tobacco Counters Health, Watch 2002 Sponsored by UICC, WHO, ICOC, IASLC & WHF in September 2002.
7. **Best Poster of Day** awarded to Miss Shilpi Soni World Assembly on Tobacco Counters Health, Watch 2002 Sponsored by UICC, WHO, ICOC, IASLC & WHF in September 2002.
8. **Best Poster of Day** awarded to Rinu Khanna in 9th Asian Pacific Federation of Clinical Biochemistry & 28th Annual Conference of Association of Clinical Biochemists of India, 2002.
9. **Best Poster of Day** awarded to Miss Nidhi Rohatgi & Mr. Nitin Chakravarti XXVIII Annual Meeting of the in Indian Immunology Society & Symposium on Immune-Effector Mechanisms, 2001.

10. **Best Poster of Day** awarded to Mr. Nitin Chakravarti World Assembly on Tobacco Counters Health, Watch 2000 Sponsored by UICC, WHO, ICOC, IASLC & WHF in Dec 2000.
11. **Best Poster of Day** awarded to Miss Shilpi Soni World Assembly on Tobacco Counters Health, Watch 2000 Sponsored by UICC, WHO, ICOC, IASLC & WHF in Dec 2000.
12. **Best Poster of Day** awarded to Miss Nidhi Rohatgi World Assembly on Tobacco Counters Health, Watch 2000 Sponsored by UICC, WHO, ICOC, IASLC & WHF in Dec 2000.
13. **Best Poster of Day** awarded to Mr. Anupam Kumar World Assembly on Tobacco Counters Health, Watch 2000 Sponsored by UICC, WHO, ICOC, IASLC & WHF in Dec 2000.
14. Geeta Mittal Gold Medal and Book Prize for **Best Clinical Research**, AIIMS, 2000 to Nitin Chakravarti.
15. Shri Mohan Lal Wig Gold Medal for **Best Clinical Research**, AIIMS, 1999 to Purna Pande.
16. **Indo-German Award** First Prize Rs. 51,000/- sponsored by UICC, DOSAK and WHO during 3rd International Congress on Oral Cancer in 11 in 1994 to Miss Jasbir Kaur.
17. Rajanikant Baxi Award for **Best poster presentation** during XII Annual Convention of Indian Association for Cancer Research in 1994 to Miss Tamiz P. Chelvi.
18. **Two Young Scientists Awards** during XVIth International Congress of Biochemistry & Molecular Biology during 1994 to Dr. Gautam Sarkar and Miss Tamiz P. Chelvi.

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS

American Association for Cancer Research
 New York Academy of Sciences
 Indian Association for Cancer Research
 Indian Society of Cell Biology
 Indian Immunology Society
 Association of Clinical Biochemists of India
 Biotechnology Society of India

MEMBER OF INTERNATIONAL/NATIONAL COMMITTEES

International

- ❖ **Scientific Advisory Group Member** for Preamble for Monographs on the Evaluation of Carcinogenic Risks to Humans, 2005, International Agency for Research in Cancer (IARC, WHO).
- ❖ **Working Group Member** for Monograph on the Evaluation of Carcinogenic Risks to Humans, Volume 89, 2004, Smokeless Tobacco and Some Related Nitrosamines, International Agency for Research in Cancer (IARC, WHO).
- ❖ **Working Group Member** for Monograph on the Evaluation of Carcinogenic Risks to Humans, Volume 85, 2004, Betel Quid, Areca-nut chewing and Some Related Nitrosamines, International Agency for Research in Cancer (IARC, WHO).

National

- Member, Project Advisory Committee, National Cancer Control Programme, Ministry of Health & Family Welfare
- Member, Statuary Warning for Health Hazards of Tobacco, Ministry of Health & Family Welfare
- Joint Secretary of Indian Association for Cancer Research
- Executive member of Indian Society of Cell Biology
- Member Project Advisory Committee & Expert Group of Indian Council of Medical Research (NCD- Cancer)

- Member Project Advisory Committee, Ophthalmology, ICMR
- Member Project Advisory Committee & Expert Group of Indian Council of Medical Research (NCD- Environment)
- Expert Group (Cancer), Ministry of Health & Family Welfare
- Expert, Union Public Service Commission
- Expert, Scientific Research Committee of the Gujarat Cancer Society 2001.
- Member of Selection Committee for Research Associate, Institute of Pathology, ICMR
- DBT Nominee, Institutional Biosafety Committee of Dabur Research Foundation.
- Expert, Advanced Centre for Treatment, Research & Education in Cancer (ACTREC), Mumbai.
- Expert, Chitranjan National Cancer Institute, Kolkatta.
- Member Selection Committee for JRF/SRF Institute of Cytology and Pathology, ICMR.
- Member Selection Committee for SRF, VP Chest Institute New Delhi.
- Member Patent Cell Committee, AIIMS, New Delhi
- Member Selection Committee for Staff appointment in Research Projects, AIIMS
- Member Convocation Committee, AIIMS
- Member Institute Day Celebrations Committee, AIIMS

CO-ORGANIZER OF INTERNATIONAL CONFERENCES/COURSES

National Convenor and Chairperson Scientific Committee 2nd World Assembly on Tobacco Counters Health, WATCH 2002 sponsored by UICC, WHO, WHF, ICOOC, IASLC, ESMO, AFPS, INWAT, Sept. 2002, New Delhi.

National Convenor and Chairperson Scientific Committee for World Assembly on Tobacco Counters Health, WATCH-2000 sponsored by UICC, WHO, WHF, ICOOC, IASLC, ESMO, AFPS, INWAT, Dec. 2000, New Delhi.

Co-Organizer *UNESCO & ICRO* (International Cell Research Organization) sponsored International training course on *Frontiers of Cancer Genetics*, Sept. 2000, New Delhi.

Co-Convenor and Chairperson Scientific Committee for 6th International Congress on Oral Cancer, Feb.1999, New Delhi.

Co-Convenor and Resource Faculty of WHO Workshop on "Diagnostic, Prognostic and Epidemiological Value of Cancer Genetics." March 1999, New Delhi.

Organizing Committee member of XVIII Annual Convention of Indian Association for Cancer Research, February 1999, New Delhi.

CME Course on "Molecular Biology of Cancer" 1998, New Delhi

Chairperson Dr. B.S. Narang Memorial Symposium, 1998, New Delhi.

CHAIRPERSON IN INTERNATIONAL CONFERENCES:

1. Chaired Young Scientists Award Presentation session during 24th Annual Convention of the Indian Association for Cancer Research, 2005.
2. Anti-cancer drug development. 23rd Annual Convention of the Indian Association for Cancer Research, IACR, January, 2004.
3. Panelist Symposium 5th Congress of Asian Academy of Preventive Dentistry & 24th Annual Conference of Indian Society of Pedodontics & Preventive Dentistry, Chandigarh, November, 2002.
4. Chaired Oral presentation session in 2nd World Assembly on Tobacco Counters Health (WATCH 2002), September 2002.

5. Panelist Symposium Betel quid and Oral Health in 11th Biennial Meeting: International Congress on Oral Pathology and Medicine at Raffles City Convention Centre, Singapore, August 2002.
6. Invited participant in WHO-ICMR Post Launch Interactive Session on “ELSI of Genomics” 26 October 2002 at New Delhi.
7. Chairperson Carcinogenesis Session, 21st Annual Convention of Indian Association for Cancer Research, Bangalore, Feb. 2002.
8. Chaired oral presentation session 21st Annual Convention of Indian Association for Cancer Research, Bangalore, Feb. 2002.
9. Chaired Oral presentation session in 21st Annual Convention of Indian Association for Cancer Research Bangalore, Jan. 2002.
10. Invited participant in First Meeting of ICMR-NIH Biomedical Research Policy Forum, 18-20 October, 2000 at New Delhi.
11. Chaired Oral presentation session in World Assembly on Tobacco Counters Health (WATCH 2000), December 2000.
12. Chaired oral presentation session in XV Asia Pacific Cancer Conference in Dec. 1999.
13. Chaired Proffered Papers session on Risk Modulators in 6th International Congress on Oral Cancer in Feb. 1999.
14. Invited participant in Indo - German Workshop on "Oncology in to the next Millennium" Lonavala, February 1999
15. Chaired Problem Oriented small group discussions relating to Molecular Biology in Dr. B.S. Narang Memorial Symposium “Biochemistry in Medical Education-I. The Molecular Biology in Undergraduate Teaching” held in 1998.
16. Invited participant in WHO workshop on “National treatment policy, low cost technology and curriculum development for training” (Sponsored by Dte. Gen. Of Health Services and Ministry of Health and FW, Govt. of India), held in 1998.
17. Rapoteur of session on “Multidrug Resistance” in Indo-French Symposium on”Apoptosis and Multidrug Resistance” IUCAA; Pune February 5-11, 1997.
18. Rapoteur of the session on “Advances in Biology” in Indo-French Symposium Delhi, 1997.
19. Chaired oral presentation session in XVI International Cancer Congress in Nov. 1994.
20. Chaired oral presentation session on Tumor suppressor genes and Oncogenes in 3rd International Congress on Oral Cancer in Jan. 1994.

EDITORIAL ASSIGNMENTS

Editor Indian Association for Cancer Research News Letter

Reviewer for Scientific Journals :

- Oncogene
- International Journal of Cancer
- Oral Diseases
- World Journal of Surgical Oncology
- Annals of Oncology
- Neoplasia
- Indian Journal of Experimental Biology
- Indian Journal of Medical Research
- Journal of Biosciences
- Current Science
- Indian Journal of Clinical Biochemistry

Reviewer for Grant Proposals:

- Indo-French Center for Promotion of Advanced Research (CEFIPRA)
- Council of Scientific & Industrial Research (CSIR)
- Indian Council of Medical Research (ICMR)
- Department of Science & Technology (DST)
- Department of Biotechnology (DBT)
- Department of Atomic Energy (DAE)

PATENT: ONE (1)

1. "ESTABLISHMENT OF CELL LINE FROM BETEL AND TOBACCO ASSOCIATED HUMAN ORAL SQUAMOUS CELL CARCINOMA TO DEVELOP AN EXPERIMENTAL MODEL FOR TOBACCO INDUCED ORAL TUMORIGENESIS." Ralhan et al. May, 2004, Patent No. 6,730,514.

VISIT TO FOREIGN COUNTRIES :

S.NO.	From DD MM YY	To DD MM YY	Institute / Country of Visit	Purpose of Visit
1.	29.09.04	01.10.04	University of Ulm, Germany	DNA Repair Network, Meeting
2.	05.12.04	12.10.04	International Agency For Research on Cancer, Lyon, France	International Agency For Research on Cancer, Lyon, France
3.	11.11.03	29.11.03	University of Ulm, Germany	Indo-German Collaborative Project Research Work
4.	11.06.03	18.06.03	International Agency For Research on Cancer, Lyon, France	International Agency For Research on Cancer, Lyon, France
5.	14.07.03	16.07.03	MD Anderson Cancer Centre, Houston, USA	MD Anderson Cancer Centre, Houston, USA
6.	21.06.03	20.07.03	Ontario Cancer Institute, Toronto, Canada	Ontario Cancer Institute, Canada
7.	06.04.02	10.04.02	93 rd Annual Meeting of American Association for Cancer Research, San Francisco, USA	AIIMS
8.	04.08.02	09.08.02	11 th Biennial Meeting of the International Association of Oral Pathologists (IAOP) International Congress on Oral Pathology and Medicine, Singapore	Indian National Science Academy
9.	15.05.2000	14.05.2000	Institute de Genetique et de Biologie Moleculaire et Cellulaire (IGBMC) France	Indo-French Collaborative Project Research Work
10.	15.05.99	14.06.99	Institute de Genetique et de Biologie Moleculaire et Cellulaire (IGBMC) France	Indo-French Collaborative Project Research Work
11.	15.05.98	14.06.98	Institute de Genetique et de Biologie Moleculaire et Cellulaire (IGBMC) France	Indo-French Collaborative Project Research Work
12.	15.05.97	14.06.97	Institute de Genetique et de	Indo-French Collaborative

			Biologie Moleculaire et Cellulaire (IGBMC) France	Project Research Work
13.	08.07.96	12.07.96	Convention Centre, London, England	Paper presentation XVI International Congress in Clinical Chemistry
14.	22.05.96	13.07.96	Institute de Genetique et de Biologie Moleculaire et Cellulaire (IGBMC), France	Indo-French Collaborative Project Research Work
15.	05.07.96	08.07.96	University of Dundee, Scotland	Paper presentation 8 th p53 Workshop
16.	16.08.95	21.08.95	Singapore Convention Centre, Singapore	Paper Presentation 12 th Asia Pacific Cancer Conference
17.	11.06.94	27.06.94	Ontario Cancer Institute, Canada	Paper Presentation 7 th p53 Workshop
18.	5.12.84	10.02.86	National Institutes of Health, USA	Fogarty Post Doctoral Fellowship

R & D Project(s) being pursued as Principal Investigator (SIX)

S. No.	Projects	Funding Agency	Duration	Budget (In Rs.)
1.	Functional Analysis and clinical significance of Novel molecular targets in cytoskeletal reorganisation and locoregional spread of oral cancer using Proteomics	Department of Biotechnology	of Three Years (2005-2008)	38,00,000
2.	Designing of Methylation target arrays for Breast Cancer	Department of Biotechnology	of One Year (2005-2006)	22,16,000
3.	Characterization and functional analysis of differentially expressed genes in esophageal cancer.	Department of Science & Technology.	Three Years (2005-2008)	20,00,000
4.	Relationship between polymorphisms in drug metabolizing enzymes, CYP1A1 and GSTM1 and the risk of developing oral precancer and cancer among consumers of tobacco and chewing products.	Indian Council of Medical Research Task Force Project	of Five Years (2002-2007)	1,55,00,000
5.	Gene expression profile analysis of human esophageal cancer using cDNA microarrays.	Indian Council of Medical Research Task Force Project Genome.	of Three Years (2002-2005)	34,00,000
6.	Role of genomic instability due to alterations of recombination factors p53 and BRCA1 in the pathogenesis of breast cancer.	Indo German Project	Three years (2002-2005)	33,00,000

PROJECTS COMPLETED (Eleven)

1.	Multicentric National Program on Evaluation and validation of molecular markers in oral cancer. (Co-ordinator)	Department of Biotechnology	of 2001-2004	20,66,000
2.	Role of Retinoids and their receptors in the development and prevention of Oral Cancer.	Department of Biotechnology	of Three Years (2001-2003)	13,50,000
3.	Molecular alterations in human esophageal cancer: potential prognostic implications	Indian Council of Medical Research	Three years (2000-2003)	16,06,000
4.	Identification and characterization of differentially expressed genes in human esophageal cancer.	Department of Science & Technology.	Three years (2000-2003)	18,00,000
5.	Development of p53-ELISA diagnostic kit for early diagnosis of cancer.	Bridge Project Indo-French Industry-Institution Project Indo-French Centre	2001-2002	2,35,000
6.	Study of Genetic alterations in Precancerous and Cancerous Oral Lesions.	Indo French Centre for Promotion of Advanced Research (IFCPAR)	1996-1999	45,00,000
7.	Genetic alterations in Human Esophageal Cancer Diagnostic/Prognostic implications	Council of Scientific and Industrial Research (CSIR)	1998-2000	15,00,000
8.	Study of Multidrug Resistance in Human Oral Cancer.	Department of Science and Technology (DST)	1995-1998	10,00,000
9.	Study of Tumor Suppressor Gene p53 in Human Oral Cancer.	Council of Scientific and Industrial Research. (CSIR)	1994-1997	6,00,000
10.	Signal transduction mechanism mediating hyperthermic killing of malignant cells.	Department of Science and Technology (DST) – YS	1990-1993	2,50,000
11.	Isolation and identification of Heat Shock induced proteins of human neoplastic cells for potential use in immunodiagnosis of neoplasia.	All India Institute of Medical Sciences, New Delhi.	1987 – 1989	50,000

Invited Lectures Delivered: SIXTY SIX (67)

1. R. Ralhan. From Proteins to Pathways: The new avenues of Proteins in GI Diseases. Department of Gastroenterology, AIIMS, New Delhi, April, 2005.
2. R.Ralhan. Gene expression profile analysis using DNA microarrays. Prenatal & Postnatal Diagnosis of Genetic Disorders using Molecular Methods, AIIMS, New Delhi, January 2005.
3. Molecular pathogenesis of upper-aerodigestive tract cancers. Guha Research Conference, Kodaikanal, Tamilnadu, December, 2004
4. R.Ralhan. Gene expression profiling of tobacco associated cancers: novel targets for molecular therapeutics. Chemistry Biology Interface: Synergistic New Frontiers, Vigyan Bhawan, New Delhi, November, 2004.
5. R.Ralhan. DNA Double Strand Break Repairs defects in Breast Tumorigenesis. DNA Repair, Germany, September, 2004.
6. R.Ralhan. Genetic Factors in transformation. FDI Annual World Dental Congress, New Delhi, September, 2004.
7. R.Ralhan. Emerging Molecular Targets in Oral Carcinogenesis. National Centre for Cell Science, Pune, July, 2004.
8. R.Ralhan. Emerging Molecular Markers for Oral Cancer. Indo-Tunisian Workshop on Biotechnology in Medicine. New Delhi, June, 2004.
9. R.Ralhan. Gene expression profile analysis using cDNA microarrays. Third Hands –on Workshop on “Prenatal & Postnatal Diagnosis of Genetic Disorders using Molecular Methods” A.I.I.M.S. New Delhi, March, 2004.
10. R.Ralhan. Environment and cancer. 9th Refresher Course in Environmental Sciences and 30th Refresher Course in Political Science, Academic Staff College, Jawaharlal Nehru University, Delhi, March, 2004.
11. R.Ralhan. Proteomics and cancer. Hands on Training workshop on Newer techniques in molecular oncology. Cancer Institute, Chennai, February, 2004.
12. R.Ralhan. International Symposium on Molecular Medicine & Cancer: Contemporary issues, February, 2004.
13. R.Ralhan. Gene Expression Gene Expression profiling of tobacco associated cancers of the upper aerodigestive tract Anti-cancer drug development. 23rd Annual Convention of the Indian Association for Cancer Research, IACR, January, 2004.
14. R.Ralhan. Smoking cessation: Established and experimental approaches, IRCH Foundation day conference, Lung Cancer: Indian Approach, AIIMS, New Delhi, November, 2003.
15. R.Ralhan. Molecular markers in head and neck cancer. Foundation for head & neck oncology, AIIMS, New Delhi, October 2003.
16. R.Ralhan. Cancer Reseach at AIIMS. Dr. V. Ramalingaswami Board Room, AIIMS, New Delhi, October 2003.
17. R.Ralhan. Panelist in the Session Pre-Clinical Research Methodologies. National Cancer Congress, New Delhi, Sept. 2003.
18. R. Ralhan. Alterations in Retinoid Receptors in Oral Tumorigenesis. MD, Anderson Cancer Centre, Houston, USA, July 2003.
19. R. Ralhan. Molecular alterations in betel and tobacco related oral cancer. Ontario Cancer Institute, Toronto, Canada, June 2003.
20. R.Ralhan. International Agency For Research on Cancer, Evaluation of Carcinogenic risks to humans working group on betel-quid and areca nut chewing and some related nitrosamines, Lyon (France), June, 2003.

21. R.Ralhan. Gene expression profiling of human cancers. 4th Annual Symposium on Froniters in Biomedical Research. Dr. B.R. Ambedkar Centre for Biomedical Research, University of Delhi, Delhi, April, 2003.
22. R.Ralhan. Identification and characterization of differentially expressed genes in human cancers. Seminar Series in Biotechnology, AIIMS, April, 2003.
23. R.Ralhan. ICMR Indo-German Task Force Meeting Advanced Centre for Treatment Research & Education in Cancer, Khargar, Navi Mumbai, January, 2003.
24. R.Ralhan. Second Hands-on Workshop Prenatal & Postnatal diagnosis of genetic disorders using molecular methods, AIIMS, February, 2003.
25. R.Ralhan. National Science Day, 50 years of DNA: 25 years of IVF. The blue print of life. Indian Council of Medical Research, February, 2003.
26. R.Ralhan. Emering diagnostic and prognostic molecular markers in Oral Cancer. 5th Congress of Asian Academy of Preventive Dentistry & 24th Annual Conference of Indian Society of Pedodontics & Preventive Dentistry, Chandigarh, November, 2002.
27. R.Ralhan. Tobacco related oral precancer and cancer in India. World Assembly on Tobacco Counters Health, New Delhi, September 2002.
28. R.Ralhan, S Soni, N Chakravarti, J.Kaur, M Mathur and NK Shukla. Molecular markers of malignant potential in betel quid chewers. Betel quid and oral health symposium for the 11th Biennial Meeting: International Congress on Oral Pathology and Medicine at Raffles City Convention Centre, Singapore, August 2002.
29. R. Ralhan. Molecular alterations in tobacco & betel related oral cancer. Oral Cancer Center, (UCSF) University College of San Francisco, USA, April 2002. 93rd Annual Meeting of American Association for Cancer Research, Moscone Convention Center, San Francisco, California, April 2002.
30. R Ralhan, S Soni, N Chakravarti, M Mathur, NK Shukla. Molecular alterations in betel and tobacco related oral cancer: diagnostic and prognostic implications. 9th Asian Pacific Federation of Clinical Biochemistry & 28th Annual Conference of Association of Clinical Biochemists of India, New Delhi, March, 2002.
31. R Ralhan. Molecular basis of esophageal oncogenesis. International Conference on Emerging Trends in Cancer Research, Jawaharlal Nehru University, New Delhi, March, 2002.
32. R Ralhan, S Soni, N Chakravarti, J Kaur and NK Shukla. Gene expression profile analysis of human oral cancer. Environmental Mutagen Society of India. Symposium on Environmental Genomics & Health Sciences and XXVII Annual Conference, Industrial Toxicology Research Centre, Lucknow, March, 2002.
33. R. Ralhan. Tobacco cessation/prevention through Sudarshan Kriya Yoga. SKY First International Symposium on Sudarshan Kriya, Pranayam, IRCH, AIIMS, New Delhi, March, 2002.
34. R.Ralhan. Gene expression profiling of human cancers. Department of Biotechnology, AIIMS, New Delhi, March, 2002.
35. R Ralhan, S Soni, N Chakravarti, M Mathur and NK Shukla. Clinical Implications of molecular alterations in betel and tobacco induced oral cancer. Asco Pan Asia Cancer Conference (A-PACC), New Delhi, Feb. 2002.
36. R. Ralhan. Gene expression profile analysis of human esophageal cancer. XXV All India Cell Biology Conference. November 2001 Bangalore.
37. R.Ralhan. Brain storming session on Anticancer studies and Stem cell research. Development and commercialisation of bioactive substances from plant resources, October 2001, Regional Research Laboratory, Jammu.
38. R.Ralhan. Healthy future without tobacco, 45th Institute Day Celebrations, Symposium on Life Style and Health. September 2001, AIIMS, New Delhi.

39. R.Ralhan. Molecular Markers for Oral Cancer: Targets for Gene Therapy, September 2001, Institute of Nuclear Medicine and Allied Sciences, New Delhi.
40. R.Ralhan. Molecular Markers for Oral Cancer, DBT, Task Force Workshop, 2001, June 2001, Bombay.
41. R. Ralhan. Molecular pathology and Diagnosis of Cancer, Oncology and Biotechnology R & D Division of Dabur Research Foundation, June 2001, New Delhi.
42. R. Ralhan. Molecular alterations in oral cancer: Targets for gene therapy, Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, May 2001.
43. R.Ralhan. Molecular alterations in human oral cancer: Potential clinical applications. Head and Neck Oncology Conference, AIIMS, Jan. 2001.
44. R.Ralhan. Molecular alterations in esophageal cancer: Diagnostic implications and targets for gene therapy. 20th Annual Convention of Indian Association for Cancer Research, Ahmedabad, Jan. 2001.
45. R. Ralhan, R. Khanna, S.Soni, N Chakravarti, J. Kaur, M. Mathur and N.K. Shukla. Genechips: A Step Forward In Understanding Tobacco Associated Cancers. World Assembly on Tobacco Counters Health, New Delhi, December 2000.
46. Differential Display Reverse transcription- Polymerase Chain WHO Workshop on "Frontiers in Cancer Genetics". September 2000, New Delhi.
47. Gene Therapy for Cancer. Advanced seminar series, Department of Biotechnology, AIIMS, March 2000.
48. Molecular Basis of Oral Cancer. Institute Rotary Cancer Hospital, AIIMS, March 2000.
49. Oncogenes, Tumor suppressor gene and gene therapy. Basic molecular biology in Human health and disease, Practical course organized by Institute of Cytology and Preventive Oncology (ICMR) Feb. 2000.
50. Molecular basis of colorectal cancer. Satellite Symposium on Colorectal Cancer. XV Asia Pacific Cancer Conference, New Delhi. December, 1999.
51. Molecular Biology and Pathogenesis of Oral Cancer. National Conference of Indian Association of Surgical Oncology (NatCon-IASO'99), October 1999, JollyGrant, Dehradun.
52. Differential Display Reverse transcription- Polymerase Chain and its applications in Cancer Diagnosis WHO Workshop on "Diagnostic, Prognostic and Epidemiological value of Cancer Genetics". March 1999, New Delhi.
53. Molecular Biology of Oral Cancer. VIII Biennial Conference of Indian Society of Oncology, March 1999, New Delhi.
54. Diagnostic/Prognostic significance of key cellular proteins in oral oncogenesis. Indo-German workshop on "Oncology into the next millineum", Lonavala, Feb. 1999.
55. Molecular alterations in oral tumorigenesis: Diagnostic/Prognostic implications. 6th International Congress Oral Cancer, New Delhi. Feb. 1999.
56. Identification of a potential target for gene therapy for oral cancer. 18th Annual Convention of Indian Association for Cancer Research, New Delhi, Feb. 1999, New Delhi.
57. Effects of Hyperthermia on Biological Systems. National Seminar on Low Level Electromagnetic Field Phenomena in Biological Systems, BIOSYS-99 in Jawahar Lal Nehru University, Feb. 1999, New Delhi.
58. Invited participant in Indo- French Symposium on 'Multidrug Resistance and Emerging Diseases organised by INSA and Institute De France, Academic Des Sciences 28th Feb. - 4th March'99.
59. Tumor Suppressor gene p53: A potential diagnostic / prognostic marker for oral cancer. Symposium on "Impact of Molecular Biology on the outcome of Medical Sciences" on the Institute Annual Day, AIIMS, Sept. 1997.
60. Molecular basis of Multidrug Resistance in human oral cancer. Multidrug Resistance and Apoptosis. Indo French Symposium, Feb., 1997, Pune.
61. Alterations in Tumor suppressor genes in tobacco associated human oral tumorigenesis. Institute de Genetique et de Moleculaire et de Cellulaire, France May 1997.
62. Tumor Suppressor gene p53: An early biomarker for Oral Cancer. Institute de Genetique et de Moleculaire et de Cellulaire, France. June 1996.
63. Oncogenes and Tumor Suppressor genes. CME lecture during Mid Term Conference of Indian Association of Surgical Oncology, Sept 1993, New Delhi.

64. Biochemical Aspects of Cancer. CME lecture during course on Microwave Hyperthermia and Cancer during 4th International Symposium on Recent Advances in Microwave Technology, Dec. 1993, New Delhi.
65. Biomembranes and Signal Transduction, CME lectures, Centre for Biotechnology, Jawahar Lal Nehru University in Sept. 1993.
66. Protein Tyrosine Phosphatases. Brain storming session on Cancer Research held on occasion of Golden Jubilee celebrations of Tata Memorial Centre, Bombay in 1991.
67. Recent Advances in Technology and Treatment with Hyperthermia, organized by Mitronics and ODAM, France in Aug 1988, New Delhi.

PUBLICATIONS	: ONE HUNDRED THIRTY ONE	(134)
PEER REVIEWED JOURNALS	: SEVENTY EIGHT	(78)
REVIEWS INVITED	: SIX	(6)
CHAPTERS IN BOOKS /	: FORTY SEVEN	(47)
MONOGRAPHS		
MANUSCRIPTS COMMUNICATED	: THREE	(3)

1. Nitin Charkravarti, Jatinder Kaur, Anupam Kumar, Meera Mathur, Sudhir Bahadur, N.K. Shukla, **Ranju Ralhan**. Clinical significance of altered expression of retinoid receptors in oral precancerous and cancerous lesions: relationship with cell cycle regulators. **International Journal of Cancer, 2005 (Revised and resubmitted).** (IF 4.37)
2. Amit Verma, N.K. Shukla, S.V.S. Deo and S.Datta Gupta and **Ranju Ralhan**. Anti-human MASP-2 antibody as a useful Immunohistochemical marker for tumor invasion and nodal metastasis in human esophageal squamous cell carcinoma. **International Journal of Cancer, Under Revision 2005.** (IF 4.37)
3. Amit Verma, N.K. Shukla, S.Datta Gupta, Ranju Ralhan. MEMD/ALCAM: a potential marker for tumor invasion and nodal metastasis in esophageal squamous cell carcinoma. **Oncology, IN PRESS 2005.** (IF 3.9)
4. Shilpi Arora, Jatinder Kaur, Chavvi Sharma, Meera Mathur, Sudhir Bahadur, Nootan K. Shukla, Suryanaryana VS Deo and **Ranju Ralhan**. Stromelysin 3 expression correlates with VEGF, Ets-1 and microvessel density in oral precancerous lesions and is associated with progression and prognosis of oral cancer. **Clinical Cancer Research, 2005, 11(6):2272-84.** (IF 6.5)
5. Shilpi Arora, Jatinder Kaur, Anupam Kumar, Nitin Chakravarti, Meera Mathur, Sudhir Bahadur, Nootan Kumar Shukla, Suryanaryana VS Deo and **Ranju Ralhan**. Alterations of Rb pathway components are frequent events in patients with Oral Epithelial Dysplasia and Predict Clinical Outcome in patients with Squamous Cell Carcinoma. **Oncology Basel, In Press, 2005.** (IF 3.9)
6. Shilpi Arora, Ajay Matta, Nootan Kumar Shukla and **Ranju Ralhan**. Identification of differentially expressed genes in oral squamous cell carcinoma. **Molecular Carcinogenesis, 2005, 42(2):97-108.** (IF 4.2)
7. Rinu Sharma, N.K. Shukla, **Ranju Ralhan**. TC21/R-Ras2 upregulation is an early event in esophageal tumorigenesis: potential diagnostic implications. **Oncology Basel, In Press, 2004.** (IF 3.9)
8. Neetu Sud, Rinu Sharma, Riju Ray, TK Chattopadhyay, **Ranju Ralhan**. Differential expression of beta-mannosidase in human esophageal cancer. **International Journal of Cancer, 2004, 112: 905-907.** (IF 4.37)

9. Rinu Sharma, N.K.Shukla, Meera Mathur and **Ranju Ralhan**. Prognostic significance of stromelysin-3 and tissue inhibitor of matrix metalloproteinase-2 in esophageal cancer. **Oncology Basel, 2004, 67(3-4):300-9. (IF 3.9)**
10. Neetu Sud, Rinu Sharma, Riju Ray, TK Chattopadhyay, **Ranju Ralhan**. Differential expression of GPCR-56 in human esophageal cancer. **Cancer Letters, Revised and submitted, 2005. (IF 2.6)**
11. Anupam Kumar, Jatinder Kaur, T.K. Chattopadhyay, Meera Mathur and **Ranju Ralhan**. Differential expression of retinoic acid receptors in normal and malignant esophageal tissues. **Journal of Experimental Therapeutics and Oncology, 2004, 4: 1-8.**
12. Jatinder Kaur, Nitin Chakravarti, Meera Mathur, Anurag Srivastava and **Ranju Ralhan**. Alterations in expression of retinoid receptor beta and p53 in oral submucous fibrosis. **Oral Diseases, 2004, 10: 201-6. (IF 1.06)**
13. Sharmishtha Samantaray, Rinu Sharma, T.K. Chattopadhyay and **Ranju Ralhan**. Increased expression of MMP-2 and MMP-9 in esophageal squamous cell carcinoma. **Journal of Cancer Research & Clinical Oncology, 2004, 130: 37-44. (IF 2.16)**
14. Shilpi Soni, Meera Mathur, N.K. Shukla, SVS Deo, **Ranju Ralhan**. ST-3 expression is an early event in human oral tumorigenesis. **International Journal of Cancer, 2003, 107(2):309-16. (IF 4.37)**
15. Nitin Chakravarti, Meera Mathur, Sudhir Bahadur, N.K. Shukla, **Ranju Ralhan**. Retinoic acid receptor-alpha as a prognostic indicator in oral squamous cell carcinoma. **International Journal of Cancer, 2003, 103: 544-549. (IF 4.37)**
16. Rinu Sharma, N.K. Shukla, **Ranju Ralhan**. Transcriptional Gene Expression profile of human esophageal squamous cell carcinoma in Indian population. **Genomics, 2003, 81: 481-488. (IF 3.49)**
17. Tina Mukerjee, Anupam Kumar, Meera Mathur, T.K.Chattopadhyay and **Ranju Ralhan**. Ets-1, VEGF Expression Correlates with Tumor Angiogenesis, Lymph Node Metastasis and Patient Survival in Esophageal Squamous Cell Carcinoma. **Journal of Cancer Research & Clinical Oncology, 2003, 129: 430-436. (IF 2.16)**
18. Jatinder Kaur and **Ranju Ralhan**. Establishment and characterization of a cell line from smokeless tobacco associated oral squamous cell carcinoma. **Oral Oncology, 2003, 39: 806-820. (IF 1.8)**
19. Robin Mathew, Sonia Arora, Rinu Khanna, Meera Mathur, T.K.Chattopadhyay, Nootan K. Shukla and **Ranju Ralhan**. Alterations in p53 and pRb pathways and their prognostic significance in oesophageal cancer. **European Journal of Cancer, 2002, 38: 832-41. (IF 3.69)**
20. Shilpi Soni, Perna Pande, N. K. Shukla and **Ranju Ralhan**. Coexpression of Ets-1 and p53 in oral carcinomas is associated with P-glycoprotein expression and poor prognosis. **Journal of Cancer Research and Clinical Oncology, 2002, 128: 336-342. (IF 2.16)**
21. R.Mathew, R.Kumar, M.Mathur, NK Shukla and **Ranju Ralhan**. Stromelysin-2 overexpression in human esophageal squamous cell carcinoma: potential clinical implications. **Cancer Detection and Prevention. 2002, 26: 222-228. (IF 1.18)**
22. Perna Pande, Shilpi Soni, Jatinder kaur, Sandhya Agarwal, Meera Mathur, Nootan K. Shukla and **Ranju Ralhan**. Prognostic factors in betel and tobacco related oral cancer. **Oral Oncology, 2002, 38: 491-499. (IF 1.8)**

23. Robin Mathew, Sonia Arora, Rinu Khanna, Nootan Kumar Shukla, Meera Mathur, **Ranju Ralhan**. Alterations in Cyclin D1 expression in Esophageal Squamous Cell Carcinoma in Indian population. *Journal of Cancer Research and Clinical Oncology*, 2001, 127: 251-257. **(IF 2.16)**
24. **Ranju Ralhan**, Sandhya Agarwal, Meera Mathur, Bohdan Wasylyk and Anurag Srivastava. Correlation between p53 gene mutations and circulating antibodies in betel and tobacco consuming North Indian population. *Oral Oncology*, 2001, 37: 243-250. **(IF 1.8)**
25. Nitin Chakravarti, Meera Mathur, Sudhir Bahadur, Nutan K Shukla, Cecile Rochette-Egly and **Ranju Ralhan**. Expression of RAR α and RAR β in human oral potentially malignant and neoplastic lesions. *International of Journal of Cancer*, 2001, 91: 27-31. **(IF 4.37)**
26. Jatinder Kaur, Monalisa Rao, Nitin Chakravarti, Meera Mathur, Anurag Srivastava and **Ranju Ralhan**. Co-expression of colligin and collagen in oral submucous fibrosis: plausible role in pathogenesis. *Oral Oncology*, 2001, 37: 282-287 **(IF 1.8)**
27. Sonia Arora, Robin Mathew, Meera Mathur, T.K. Chattopadhyay and **Ranju Ralhan**. MDM2 Expression correlates with p53 status in esophageal squamous cell carcinoma. *Pathology Oncology Research*, 2001, 7(3): 203-208.
28. Pande P, Soni S, Chakravarti N, **Ranju Ralhan**. Prognostic impact of Ets-1 overexpression in human oral Cancer. *Cancer Detection and Prevention*, 2001, 25: 496-501. **(IF 1.18)**
29. Robin Mathew, Sonia Arora, Abdul S. Ebrahim, Meera Mathur, Tushar K. Chattopadhyay, **Ranju Ralhan**. Esophageal Squamous cell carcinoma with DNA replication errors (RER+) are associated with p16/pRb loss and WildType p53. *J. Cancer Res. & Clinical Oncology* 2001, 127:603-612. **(IF 2.16)**
30. **Ranju Ralhan**, Sandhya Agarwal, Meera Mathur, Bohdan Wasylyk and Nootan K.Shukla. Induction of MDM2-P2 transcripts correlates with stabilized wild type p53 in Betel- and Tobacco Related Human Oral Cancer. *American Journal of Pathology*, 2000, 157: 587-596. **(IF 6.9)**
31. Rimple Bahl, Sonia Arora, Neera Nath, Meera Mathur, Nootan K. Shukla and **Ranju Ralhan**. Novel polymorphism in p21 Waf1/Cip1 cyclin dependent kinase inhibitor gene: association with human cancer. *Oncogene*, 2000, 19: 337-350. **(IF 6.5)**
32. Sagar Sengupta, **Ranju Ralhan** and Bohdan Wasylyk. Tumour regression in a Ligand inducible manner mediated by a chimeric tumour suppressor derived from p53. *Oncogene*, 2000, 19: 323-328. **(IF 6.5)**
33. **Ranju Ralhan**, Sandhya Agarwal, Meera Mathur, Bohdan Wasylyk and Anurag Srivastava. Association between polymorphism in p21^{Waf1/Cip1} cyclin dependent kinase inhibit gene and betel and tobacco related human oral cancer. *Clinical Cancer Research*, 2000, 6: 2440-2447. **(IF 6.5)**
34. **Ranju Ralhan**, Sonia Arora, Tushar Kant Chattopadhyay, Nootan K. Shukla and Meera Mathur. Circulating p53 antibodies, p53 gene mutational profile and product accumulation in esophageal squamous cell carcinoma in India. *International Journal of Cancer*, 2000, 85: 791-795. **(IF 4.37)**
35. Jatinder Kaur, Jasbir Kaur and **Ranju Ralhan**. Induction of apoptosis by abrogation of HSP70 expression in human oral cancer. *International Journal of Cancer* 2000, 85: 1-6. **(IF 4.37)**
36. **Ranju Ralhan**, Robin Mathew, Sonia Arora, Nootan K. Shukla and Meera Mathur. Frequent alterations in the expression of tumor suppressor genes p16ink4a and Rb in Esophageal Squamous Cell Carcinoma in Indian population. *J. Cancer Res. & Clin. Oncol.*, 2000, 126: 655-660. **(IF 2.16)**

37. Poonam Salotra, **Ranju Ralhan** and G. Sreenivas. Heat-Stress induced modulation of protein phosphorylation in virulent promastigotes of *Leishmania donovani*. *International Journal of Biochemistry and Cell Biology*, 2000, 32: 309-316. (IF 3.57)
38. **Ranju Ralhan**, Rajeeb Kumar Swain, Sandhya Agarwal, Jasbir Kaur , Neera Nath, Gautam Sarkar, Meera Mathur and Nootan K. P-glycoprotein is positively correlated with p53 in human oral premalignant and malignant lesions and is associated with poor prognosis. *International Journal of Cancer*, 1999, 84: 80-85. (IF 4.37)
39. Prerna Pande, Meera Mathur, Nootan K. Shukla and **Ranju Ralhan**. Ets -1: A plausible marker of invasive potential and lymph node metastasis in human oral squamous cell. *Journal of Pathology*, 1999, 189: 40-45. (IF 5.06)
40. Sandhya Agarwal, Meera Mathur, Nootan K. Shukla and **Ranju Ralhan**. Prognostic significance of MDM2/p53 coexpression in oral premalignant and malignant: potential prognostic implications. *European Journal of Cancer, Oral Oncology*, 1999, 35: 209 - 216. (IF 3.69)
41. **Ranju Ralhan**, Neera Nath, Sandhya Agarwal, Bohdan Wasylyk and Nootan K. Shukla. Circulating p53 antibodies as early markers of oral cancer: Correlation with p53 alterations. *Clinical Cancer Research*, 1998, 4: 2147-2152. (IF 6.5)
42. Jasbir Kaur, Anurag Srivastava and **Ranju Ralhan**. Prognostic significance of p53 protein overexpression in Betel and Tobacco related oral oncogenesis. *International Journal of Cancer*, 1998, 79: 370 - 375. (IF 4.37)
43. Jasbir Kaur, Anurag Srivastava and **Ranju Ralhan**. Expression of 70-kDa heat shock protein in oral lesions: Marker of biological stress or pathogenecity. *European Journal of Cancer, Oral Oncology*, 1998, 34: 496-501. (IF 3.69)
44. Prerna Pande, M Prerna Pande, Meera Mathur, Nootan K. Shukla and **Ranju Ralhan**. pRb and p16 protein alterations in betel and tobacco associated human tumorigenesis. *European Journal of Cancer, Oral Oncology*, 1998, 34: 396 - 403. (IF 3.69)
45. Sandhya Agarwal, Meera Mathur, Anurag Srivastava and **Ranju Ralhan**. Expression of cyclin dependent kinase inhibitor p21/Waf1/Cipl in premalignant and malignant oral lesions: Relationship with p53 status. *European Journal of Cancer, Oral Oncology*, 1998, 34: 353 - 360. (IF 3.69)
46. Dayanand Sharma, Tamiz P. Chelvi, Jatinder Kaur and **Ranju Ralhan**. Thermosensitive liposomal Taxol formulation: Heat mediated targeted drug delivery in murine melanoma. *Melanoma Research* 1998, 8: 240 – 244. (IF 2.19)
47. Jasbir Kaur, Satya N. Das, Anurag Srivastava and **Ranju Ralhan**. Cell surface expression of 70kDa heat shock protein in human oral dysplasia and squamous cell carcinoma: Correlation with clinicopathological features. *European Journal of Cancer, Oral Oncology*, 1998, 34: 93 - 98. (IF 3.69)
48. Deepak Gaur, Sonia Arora, Neera Nath, Meera Mathur, Tushar Kant Chattopadhyay and **Ranju Ralhan**. High prevalence of p53 gene alterations and protein overexpression in human esophageal cancer: correlation with dietary risk factors in India. *Clinical Cancer Research* 1997, 3:2129-2136. (IF 6.5)
49. **Ranju Ralhan**, Murli Naryanan, Poonam Salotra, Nootan K. Shukla and Shyam S. Chauhan. Evaluation of P-glycoprotein expression in human oral oncogenesis: Correlation with clinicopathological features. *International Journal of Cancer* 1997, 72: 728-734. (IF 4.37)

50. Jasbir Kaur, Anurag Srivastava and **Ranju Ralhan**. Serum p53 antibodies in patients with oral lesions: Correlation with p53 and HSP70 complexes. *International Journal of Cancer, Predictive Oncology*, 1997, 74: 609-613. (IF 4.37)
51. Gautam Sarkar, Neera Nath, Nootan K. Shukla and **Ranju Ralhan**. Glutathione S-Transferase pi expression in normal and malignant oral mucosa. *European Journal of Cancer, Oral Oncology*, 1997, 33: 74-81. (IF 1.8)
52. Tamiz. P. Chelvi and **Ranju Ralhan**. Hyperthermia potentiates antitumor effect of thermosensitive liposomes encapsulated melphalan and radiation in murine melanoma. *Tumor Biology*, 1997, 18: 250-260. (IF 1)
53. Vibhor Jain, Satya N. Das, Kalpana Luthra, Nootan K. Shukla and **Ranju Ralhan**. Differential expression of multidrug resistance gene product, P-glycoprotein, in normal, dysplastic and malignant oral mucosa in India. *International Journal of Cancer*, 1997, 74: 128-133. (IF 4.37)
54. **Ranju Ralhan** and Tamiz P. Chelvi. Biochemical aspects of Hyperthermia and Cancer. *Journal of the Institution of Electronics and Telecommunications Engineers*, 1997, 14: 133-138.
55. Arup Saha, **Ranju Ralhan**, Debashis Dev, Anurag Srivastava, Mahesh C. Misra and Sunil Chumber. Evaluation of Tumour Necrosis Factor – alpha in oral carcinoma. *Annals of National Academy of Medical Sciences (India)*, 1997, 33: 25 –30.
56. Dayanand Sharma, Tamiz P. Chelvi, Jatinder Kaur, Ketaki Chakravorty, Tapas K. De, Amarnath Maitra and **Ranju Ralhan**. Novel taxol formulation: Polyvinylpyrrolidone Nanoparticle encapsulated taxol for drug delivery in cancer therapy. *Oncology Research*, 1996, 8: 281-286. (IF 1.79)
57. Jasbir Kaur, Anurag Srivastava and **Ranju Ralhan**. p53-HSP70 complexes in Human oral dysplasia and Cancer : Potential Prognostic implications. *European Journal or Cancer, Oral Oncology*, 1996, 32B: 45-49. (IF 1.8)
58. **Ranju Ralhan** and Jasbir Kaur. Differential expression of Mr 70,000 Heat shock protein in normal, premalignant and malignant human uterine cervix. *Clinical Cancer Research* 1995, 1217-1222. (IF 6.5)
59. **Ranju Ralhan**, Jasbir Kaur, Tamiz P. Chelvi, Surya Pratap Singh and Halima Zeba. Heat stress stimulates high affinity GTPase in cervical carcinoma cells. *International Journal of Biochemistry and Cell Biology*, 1995, 23: 263-269. (IF 3.57)
60. Jasbir Kaur and **Ranju Ralhan**. Differential expression of 70kDa heat shock protein in human oral tumorigenesis. *International Journal of Cancer*, 1995, 63: 774-779. (IF 4.37)
61. Tamiz P Chelvi and **Ranju Ralhan**. Designing of heat sensitive liposomes from natural lipids for multimodality cancer therapy. *International Journal of Hyperthermia*, 1995, 11: 685-695. (IF 1.76)
62. Tamiz P. Chelvi, S.K. Jain and **Ranju Ralhan**. Heat mediated selective delivery of liposome associated melphalan in murine melanoma. *Melanoma Research* 1995, 5: 321-326. (2.19)
63. Tamiz P. Chelvi, S.K. Jain and **Ranju Ralhan**. Hyperthermia mediated targeted delivery of thermosensitive liposome encapsulated melphalan in murine tumors. *Oncology Research*, 1995, 7: 393-398. (IF 1.79)
64. Tamiz P. Chelvi and **Ranju Ralhan**. Enhanced antitumor efficacy of radiation in combination with heat sensitive liposomes encapsulated drug and hyperthermia on murine tumors. *Journal of Clinical Biochemistry and Nutrition*, 1995, 19: 133-142.

65. Poonam Salotra, D. Chauhan, **Ranju Ralhan** and Rakesh Bhatnagar. Tumor Necrosis Factor-alpha induces preferential expression of stress proteins in virulent promastigotes of *Leishmania donovani*. *Immunology Letters*, 1995, 44: 1-5. (IF 1.71)
66. Jasbir Kaur, Anurag Srivastava and **Ranju Ralhan**. Overexpression of p53 protein in betel and tobacco related human oral dysplasia and squamous cell carcinoma in India. *International Journal of Cancer*, 1994, 58: 340-345. (IF 4.37)
67. Poonam Saltora, **Ranju Ralhan** and Rakesh Bhatnagar. Differential expression of stress proteins in virulent promastigotes of *Leishmania donovani*. *Biochemistry and Molecular Biology International*, 1994, 33: 691-697.
68. **Ranju Ralhan** and Alka Agarwal. Development of an enzyme immunoassay for measurement of 70KD heat shock protein (hsp70) levels in cells. *Endocurietherapy / Hyperthermia*, 1991, 7: 147-150.
69. Arati Roy, Alka Aggarwal and **Ranju Ralhan**. Anti-Arabinogalactan IgM/IgG ratio: A screening index for leprosy patients. *Indian Journal of Leprosy* 1990, 62: 435-442.
70. Madhav Bhatia, **Ranju Ralhan** and Shail K. sharma. Ascorbate inhibits specific binding of etorphine and low km GTPase in NG 108-15 hybrid cells. *Indian Journal of Biochemistry and Biophysics* 1988, 25: 699-702. (IF 0.25)
71. **Ranju Ralhan** and George S. Johnson. Destabilization of cytoplasmic mouse mammary tumor RNA by heat shock: prevention by cycloheximide pretreatment. *Biochem. & Biophysics Research Communication* 1986, 137: 1028-1033.
72. George S. Johnson and **Ranju Ralhan**. Glucocorticoid agonists as well as antagonists are effective inducers of mouse mammary tumor virus RNA in mouse mammary tumor cells treated with inhibitors of ADP-ribosylation. *Journal of Cellular Physiology*, 1986, 129: 36-42. (IF 5.46)
73. Arati Roy, Alka Agarwal and **Ranju Ralhan**. Arabinogalactan, a complimentary antigen to phenolic glycolipid in leprosy diagnosis. *Annals of National Academy of Medical Sciences* (India), 1985, 21: 124-127.
74. **Ranju Ralhan**, A.H. Band, Arati Roy, G.H. Hajini, A.K. Sharma and G.P.Talwar. An enzyme immunoassay titrating IgM antibody against phenolic glycolipid for diagnosis of lepromatous leprosy. *Indian Journal of Medical Research*, 1985, 82: 110-115. (IF 0.45)
75. **Ranju Kapoor** and T.A. Venkitasubramaniam. Purification and properties of pyruvate kinase from *Mycobacterium smegmatis*. *Archives of Biochemistry and Biophysics*, 1983, 225: 320-330. (IF 2.33)
76. **Ranju Ralhan** and T.A. Venkitasubramaniam. Glucose 6-phosphate activation of pyruvate kinase from *mycobacterium smegmatis*. *Biochemical Journal*, 1981, 193: 435-440. (IF 4.10)
77. **Ranju Ralhan**, Jayanthi Bai N. and T.A. Venkitasubramaniam. Gluconeogenesis in Mycobacteria. *Journal of Scientific and Industrial Research*, 1979, 30: 454-460. (IF 0.19)
78. **Ranju Ralhan**, Ved Pal S. Chauhan and A.K. Sarkar. Effect of acute diabetes and insulin treatment on erythrocyte lipid composition in rats. *IRCS Medical Sciences*, 1978, 6: 418.

REVIEWS (INVITED) SIX (6)

1. **Ranju Ralhan** and Jatinder Kaur. Retinoids as chemopreventive agents. *Journal of Biological Regulators and Homeostatic Agents*, 17(1):66-91, 2003.
2. Anurag Srivastava, **Ranju Ralhan** and Jatinder Kaur. Angiogenesis in Cutaneous Melanoma: pathogenesis and Clinical Implications. *Microscopy Research and Technique (MRT)*, 60: 208-224, 2003.

3. *Ranju Ralhan* and Jatinder Kaur. Multidrug Resistance in Oral Cancer. **Proceedings of Indian National Science Academy, PINSAB, 69(1):** 83-110, 2003.
4. *Ranju Ralhan* & Jatinder Kaur. Tobacco Associated Molecular Changes. **Advances in Oncology, Ed. Pandey M. Nair MK, Sebastian P. Vol 2 Jaypee Brothers Med Publ (P) Ltd. New Delhi,** 128-154, 2003.
5. *Ranju Ralhan*. Molecular Markers in Cancer. **Advances in Oncology, Ed. Pandey M. Nair MK, Sebastian P. Vol I Jaypee Brothers Med Publ (P) Ltd. New Delhi,** 18-58, 1999.
6. *Ranju Ralhan*, Anupam Kumar and Rinu Sharma. Microsatellite alterations in Esophageal Squamous Cell Carcinoma. **International Journal of Human Genetics,** 2005, In Press.

PAPERS COMMUNICATED: Three (3)

1. *Ranju Ralhan*, Jatinder Kaur, Rolf Kreienberg and Lisa Wiesmüller. Recombinative DNA repair and breast cancer. **BBA reviews on Cancer**
2. Nidhi Rohatgi, Jatinder Kaur, Anurag Srivastava and *Ranju Ralhan*. Smokeless tobacco (khaini) extracts modulate gene expression in epithelial cell culture from an oral hyperplasia. **Oral Oncology.**
3. Nidhi Rohatgi, Jatinder Kaur, Ajay Matta and *Ranju Ralhan*. Identification of smokeless tobacco responsive differentially expressed genes in cell culture from oral leukoplakia. **Molecular Carcinogenesis.**

ABSTRACTS OF PAPERS PRESENTED IN INDEXED JOURNALS – SEVEN (7)

1. KC Nandipati, A. Srivastava, *R. Ralhan*, S.Chumber. Glutathione-S-Transferase M1 polymorphism as a susceptibility factor in development of oral lesions like leukoplakia, sub mucous fibrosis and lichen planus. Cancer Detection and Prevention, 2004 Symposium Volume, S-105. **7th International Symposium on the Molecular basis of Predictive Oncology & Intervention Strategies.** Nice, France, February, 2004.
2. S. Arora, N. Chakravarti, M. Mathur, N.K. Shukla and *R. Ralhan*. Expression of G1-S modulators in oral cancer and correlation with tumor progression. **Cell Cycle, Chromosomes and Cancer, THE MIAMI NATURE BIOTECHNOLOGY WINTER SYMPOSIA,** Radisson Deauville Resort Hotel Miami Beach Florida, February 2004.
3. *R. Ralhan*, S.Soni, N.Chakravarti, J.Kaur, M. Mathur and N.K. Shukla. Molecular pathogenesis of smokeless tobacco related human oral cancer. **Proceedings of 93rd Annual Meeting of American Association for Cancer Research,** 2002, 515.
4. N. Charkravarti, M. Mathur, S. Bahadur, *R. Ralhan*. Clinical significance of expression of retinoid receptors and cell cycle regulatory proteins in tobacco and betel related oral squamous cell carcinoma. **Proceedings of 93rd Annual Meeting of American Association for Cancer Research,** 2002, 764.
5. *R. Ralhan*, N. Nath, S. Agarwal, J. Kaur and N.K.Shukla. Serum p53 antibodies as early markers of oral cancer: Correlation with p53 alterations. **The Immunologist 1998, Supplement 1,** 102.
6. J. Kaur, A. Srivastava and *R. Ralhan*. Specific interaction between p53 protein and 70 kDa heat shock protein in human tumors. **Cancer Research** 1992, 33 Suppl. (Abs).
7. *R. Ralhan* and A. Agarwal. An enzyme immunoassay for measurement of 70kD hsp. **Cancer Research** 1991, 32 Suppl. 391.

CHAPTER IN BOOKS/ MONOGRAPHS : FORTY SEVEN (47)

- 1 **Ranju.Ralhan**, Contributor to Genetic and Related effects, Section: Mutations: oncogenes and tumour suppressor genes, IARC Monographs Evaluation of Carcinogenic Risks to Humans, Smokless tobacco and some related nitrosamines, volume 89, 2004.
- 2 **Ranju.Ralhan**, Contributor to Genetic and Related effects, Section: Mutations: oncogenes and tumour suppressor genes, IARC Monographs Evaluation of Carcinogenic Risks to Humans, Betel quid and areca-nut chewing and some related nitrosamines, volume 85, 2003.
- 3 **Ranju Ralhan**. Molecular alterations in betel and tobacco related oral cancer: diagnostic and prognostic implications. *Indian Journal of Clinical Biochemistry*, 2002, Vol. 18.
- 4 **Ranju.Ralhan**. Tobacco related oral precancer and cancer in India. Tobacco Counters Health **A.K. Varma ed. Macmillan India, 2002, 89-92.**
- 5 Jatinder Kaur and **Ranju Ralhan**. Unraveling the molecular basis of tobacco associated oral tumorigenesis. Tobacco Counters Health **A.K. Varma ed. Macmillan India, 2002, 249-252.**
- 6 Shilpi Soni, Ajay Matta, S.V.S.Deo, Meera Mathur and **Ranju Ralhan**. Tobacco Triggers Angiogenesis. Tobacco Counters Health **A.K. Varma ed. Macmillan India, 2002, 237-239.**
- 7 Anupam Kumar, S.A.B.Raju and Vinod Kochupillai and **Ranju Ralhan**. Quitting tobacco through Sudarshan Kriya Yoga. Tobacco Counters Health **A.K. Varma ed. Macmillan India, 2002, 221-223.**
- 8 Nidhi Rohatgi, Anurag Srivastava and **Ranju Ralhan**. Guthka Chewing: An Emerging Epidemic. Tobacco Counters Health **A.K. Varma ed. Macmillan India, 2002, 93-97.**
- 9 B.S.A. Raju and **Ranju Ralhan**. Tobacco: Genetic susceptibility and Breast Cancer. Tobacco Counters Health **A.K. Varma ed. Macmillan India, 2002, 245-248.**
- 10 Nitin Chakravarti, Shilpi Soni and **Ranju Ralhan**. Ets-1 and P-glycoprotein: Putative regulators of proliferation and survival in betel and tobacco related human oral cancer. Oral Oncology, A.K. Varma ed. Vol. VII, 2001, 1-4.
- 11 **Ranju Ralhan**, Rinu Khanna, Shilpi Soni, Nitin Chakravarti, Jatinder Kaur, Meera Mathur and Nootan Kumar Shukla. Genechips: A Step Forward In Understanding Tobacco Associated Cancers. **Tobacco Counters Health A.K Varma ed. MacMillan India Ltd. 2000, 129-133.**
- 12 Jatinder Kaur, Nitin Chakravarti, Meera Mathur, Anurag Srivastava SVS Deo, **Ranju Ralhan**. Gutkha / Pan Masala Associated Oral Submucous Fibrosis: Molecular Alterations In Osf Pathogenesis. **Tobacco Counters Health A.K Varma ed. MacMillan India Ltd. 2000, 144-151.**
- 13 Rinu Khanna, Sonia Arora, Robin Mathew, Sonia Arora, Meera Mathur, T.K. Chattopadhyay, Nootan Kumar Shukla and **Ranju Ralhan**. Bidi Smoking Associated Esophageal Cancer In The Indian Subpopulation. **Tobacco Counters Health A.K Varma ed. MacMillan India Ltd. 2000, 94-98.**
- 14 Nitin Chakravarti, Meera Mathur, Sudhir Bahadur, Nootan Kumar Shukla, **Ranju Ralhan**. Tobacco Abused Oral Precancerous Lesions: Plausible Targets For Chemoprevention. **Tobacco Counters Health A.K Varma ed. MacMillan India Ltd. 2000, 139-143.**
- 15 Neera Nath, Nitin Chakravarti, Meera Mathur, SVS Deo and **Ranju Ralhan**. Tobacco Use And Misuse: An Emerging Epidemic. **Tobacco Counters Health A.K Varma ed. MacMillan India Ltd. 2000, 61-64.**

- 16 Shilpi Soni, Prerna Pande, Meera Mathur, Nootan Kumar Shukla and **Ranju Ralhan**. Tobacco Chewing: Effect on Clinicopathological and Molecular Parameters Of Oral Cancer Patients. *Tobacco Counters Health A.K Varma ed. MacMillan India Ltd. 2000, 134-138.*
- 17 Tina Mukherjee, T.K. Chatopadhyay, Meera Mathur and **Ranju Ralhan**. Molecular Alterations in Tobacco Associated Esophageal Cancer. *Tobacco Counters Health A.K Varma ed. MacMillan India Ltd. 2000 175-178.*
- 18 **Ranju Ralhan** and Jatinder Kaur. Biological effects of hyperthermia and cancer. *Proceedings of the symposium on Low level electromagnetic phenomena in biological systems. Feb. 1999, New Delhi, 90-93.*
- 19 **Ranju Ralhan**, Sandhya Agarwal, Prerna Pande, Neera Nath, Jasbir Kaur and Jatinder Kaur. Molecular alterations in oral tumorigenesis: Diagnostic / prognostic implications. *Oral Oncology, A.K. Varma ed. Vol.VI, 1999, 63-66.*
- 20 Rajeeb K. Swain, Meera Mathur, N.K. Shukla and **Ranju Ralhan**. Clinical drug resistance in oral cancer is multifactorial. *Oral Oncology, A.K.Varma ed. Vol.VI, 1999, 282-292.*
- 21 Nitin Chakravarti, Meera Mathur, Sudhir Bahadur and **Ranju Ralhan**. Differential expression of nuclear retinoid receptors in human oral tumorigenesis. *Oral oncology, A.K. Varma, Vol.VI, 1999, 105-108, Macmillan, India.*
- 22 Jatinder Kaur and **Ranju Ralhan**. Liposomal drugs: A novel approach for circumvention of MDR in oral Cancer. *Oral Oncology, A.K. Varma, Vol. VI, 1999, 151-154. Macmillan, India.*
- 23 Molina M. Sewal, Rimple Bahl, Neera Nath, Meera Mathur, Nootan K. Shukla and **Ranju Ralhan**. Alterations in CDKN2 encoded gene product in human esophageal carcinoma. *Oral Oncology, A.K. Varma, Vol.VI, 1999, 119-122. Macmillan, India.*
- 24 Prerna Pande, Meera Mathur, Nootan K. Shukla and **Ranju Ralhan**. Alterations cell cycle regulatory proteins in human oral tumorigenesis. *Oral Oncology, A.K. Varma, Vol.VI, 1999, 15-18. Macmillan, India.*
- 25 Monalisa Rao, Jatinder Kaur, Meera Mathur, Anurag Srivastava and **Ranju Ralhan**. Molecular alterations in Oral Submucous Fibrosis. *Oral Oncology, A.K. Varma, Vol. VI, 1999, 67-70. Macmillan, India.*
- 26 Jasbir Kaur, Jatinder Kaur, Anurag Srivastava and **Ranju Ralhan**. Significance of HSP70 overexpression in pathogenesis oral cancer. *Oral Oncology, A.K. Varma, Vol. VI, 1999, 109-113. Macmillan, India.*
- 27 Sandhya Agarwal, Meera Mathur, Anurag Srivastava and **Ranju Ralhan**. Differential expression of MDM2in human oral tumorigenesis. *Oral Oncology, A.K. Varma, Vol.VI, 1999, 101-104. Macmillan, India.*
- 28 Sonia Arora, Meera Mathur, Tushar K. Chattopadhyay and **Ranju Ralhan**. Esophageal cancer: Correlation of molecular alterations with dietary factors. *Oral Oncology A.K. Varma, Vol.VI, 1999, 11-14. Macmillan, India.*
- 29 Neera Nath, Gulam Nabi, Anurag Srivastava and **Ranju Ralhan**. GST MI: A Susceptibility factor for oral leukoplakia in the Indian population. *Oral Oncology, A.K. Varma, Vol. VI, 1999, 115-118. Macmillan, India.*
- 30 **Ranju Ralhan** and Jasbir Kaur. Clinical Multidrug Resistance: A multifactorial problem. *Invention Intelligence 1999, In Press.*

- 31 **Ranju Ralhan**, Neera Nath, Sandhya Agarwal, Jasbir Kaur and N.K.Shukla. Serum p53 antibodies as early markers of oral cancer: Correlation with p53 alterations. *The Immunologist* 1998, **Supplement 1**, 102.
- 32 **Ranju Ralhan** and Jasbir Kaur. Viruses and Cancer. *Invention Intelligence*. 1997: 494-495.
- 33 **Ranju Ralhan**, Jasbir Kaur and Anurag Srivastava. Prognostic significance of coexpression of p53 and HSP70 in Human Oral Carcinomas. *In A.K. Varma ed. Oral Oncology, Vol. IVB, pp 37-40, 1995. Macmillan India.*
- 34 **Ranju Ralhan**, Jasbir Kaur, Murli Narayan. Overexpression of 70kDa stress protein in squamous cell carcinomas of human uterine cervix. *Proceedings of the XVI International Cancer Congress Ed. R.S. Rao, M.G. Deo and L.D. Sanghvi. Monduzzi Editors. Italy Vol.3, pp. 2283-2286, 1994.*
- 35 Jasbir Kaur, Gautam Sarkar, Anurag Srivastava and **Ranju Ralhan**. Immunological evidence for the association of p53 with a heat shock protein in squamous cell carcinoma of oral cavity. *Proceedings of XVI International Congress. Vol.2, pp-919-921, 1994.*
- 36 Murli Narayan, Jasbir Kaur, Poonam Salotra, Shyam S. Chauhan, N.K. Shukla and **Ranju Ralhan**. Multidrug resistance in oral SCC is mediated by the multidrug transporter. *Proceedings of the XVI International cancer Congress Vol.2, pp. 975-978, 1994.*
- 37 Tamiz P. Chelvi, S.K. Jain and **Ranju Ralhan**. Thermochemotherapy of murine melanomas using heat sensitive liposomes containing melphalan and hyperthermia. *Proceedings of the XVI International Cancer Congress. Vol. 2, pp.829-833, 1994.*
- 38 **Ranju Ralhan** and Jasbir Kaur. In vitro cytotoxicity assay for prediction of thermochemosensitivity of human oral squamous cell carcinoma. *Oral Oncology Vol. IIIA pp.155-158, 1994.*
- 39 Jasbir Kaur, Anurag Srivastava and **Ranju Ralhan**. p53 protein overexpression: An early biomarker for Oral Cancer. *Oral Oncology. Vol. IIIA, pp.107-109, 1994.*
- 40 Murli Narayan, Jasbir Kaur, Shyam S. Chauhan, N.K. Shukla and **Ranju Ralhan**. P-glycoprotein overexpression: A plausible mechanism for drug resistance in human oral cancer. *Oral Oncology Vol. IIIA, pp. 142-144, 1994.*
- 41 Jasbir Kaur and **Ranju Ralhan**. Curing the cervical cancer. *Invention Intelligence* 1993, **28**: 197-201.
- 42 Jasbir Kaur, Anurag Srivastava and **Ranju Ralhan**. Specific interaction between p53 protein and 70 kDa heat shock protein in human tumors. *Cancer Research* 1992, **33 Suppl. (Abs)**.
- 43 Jasbir Kaur and **Ranju Ralhan**. Oral Cancer: Curing the Incurable. *Invention Intelligence* 1992, **28**: 176-179.
- 44 **Ranju Ralhan** and Alka Agarwal. An enzyme immunoassay for measurement of 70kD hsp. *Cancer Research* 1991, **32 Suppl. 391**.
- 45 Shail K. Sharma, Madhav Bhatia and **Ranju Ralhan**. Mechanism of development of tolerance and dependence of opioids in Neuroblastoma Y Glioma hybrid cells and Mice. *National Institute of Drug Abuse Research Monograph Series* 1988, **87**: 157-166.
- 46 Shail K. Sharma, Madhav Bhatia and **Ranju Ralhan**. Ascorbate abolishes the opiate induced compensatory increase in Adenylate cyclase by inhibition of lowkm GTPase. *Proceedings of International Narcotics Research Symposium, 1988.*

- 47 Shail K. Sharma, Madhav Bhatia and **Ranju Ralhan**. The role of endogenous opioid peptides in the development of Tolerance and dependence to opioids. *National Institute on Drug Abuse Research. Monograph Series 1987.*

PRESENTED/ LECTURES DELIVERED: ONE HUNDRED THIRTY SEVEN (137)
NON INDEXED: ONE HUNDRED THIRTY SEVEN (137)

1-9 24TH Annual Convention of Indian Association for Cancer Research, February 2005

1. Kaur J and **Ralhan R**. Establishment of Experimental Model for Oral Cancer: Use for Understanding the Molecular Mechanism of Retinoid Action
2. Rinu Sharma, T. K. Chattopadhyay and **Ranju Ralhan**. Unraveling Novel Molecular Targets in Esophageal Cancer by Gene Expression Profiling
3. Garima Gupta, Rinu Sharma, T. K. Chattopadhyay, S. Dattagupta and **Ranju Ralhan**. Differential Expression of Sperm Protein 17 in Human Esophageal Squamous Cell Carcinoma.
4. Ajay Matta, Sudhir Bahadur, S. Dattagupta and **Ranju Ralhan**. Differential Expression of 14-3-3 zeta in Human Oral Squamous Cell Carcinoma
5. Anupam Kumar, Jatinder Kaur, Tushar Kant Chattopadhyay, Meera Mathur and **Ranju Ralhan**. Differential Expression of Retinoic Acid Receptors in Normal and Malignant Esophageal Tissues
6. Binod Kumar Yadav, Jatinder Kaur, Anurag Srivastava and **Ranju Ralhan**. Polymorphism in DNA Repair Gene, XRCCI and Drug Metabolizing Enzyme, GSTM1 in Patients with Oral Leukoplakia
7. Chhavi Sharma, Jatinder Kaur, Nitin Chakravarti, Sudhir Bahadur, Siddhartha Datta Gupta and **Ranju Ralhan**. Retinoic Acid Receptors and their relationship with cell cycle regulators in oral carcinogenesis.
8. Meenakshi Sawhney, Nidhi Rohatgi, Siddhartha Datta Gupta, Anurag Srivastava, Nootan K. Shukla, Suryanarayana S.V. Deo and **Ranju Ralhan**. Deregulated Expression of Cyclooxygenase-2 in oral Carcinogenesis
9. S.A. Raju Bagadi, Chandraprakash Prasad, Richa Tripathi, Siddhartha Datta Gupta, Anurag Srivastava, Rajinder Prasad and **Ranju Ralhan**. Expression of Tumor Suppressor Proteins BRCA1 and p53 in Breast Carcinoma

10 Biotech 2004, 2nd National Conference Biotechnology Society of India, October 2004

10. A. Verma and **R. Ralhan**. Raising of Anti-Human Mannan Binding Lectin associated Serine Protease-2 (MASP-2) antibody using Bioinformatics

11-19 FDI Annual World Dental Congress, New Delhi, September, 2004

11. A. Matta, A. Kumar, N.K Shukla, S.V.S. Deo, **R. Ralhan**. Role of Genomic Instability in the Pathogenesis of Oral Squamous Cell Carcinoma.
12. A. Kumar; J. Kaur; A. Srivastava, M. Mathur and **R. Ralhan**. Molecular Pathogenesis of Oral Submucous Fibrosis (OSF).
13. J. Kaur, K. Lakshmi, A. Srivastava, G. K. Rath, P.K. Julka, K. Chaudhary and **R. Ralhan**. Polymorphisms in cancer predisposing genes in patients with oral precancerous lesions.
14. B.K. Yadav, J. Kaur, A. Srivastava and **R. Ralhan**. Polymorphism in DNA repair gene, XRCCI in patients with oral leukoplakia.
15. K. Lakshmi, J. Kaur, A. Srivastava, G.K. Rath, P.K. Julka, K. Chaudhary and **R. Ralhan**. Dental carries and oral hygiene index in patients of oral leukoplakia, submucous fibrosis and lichen planus.

16. C.Sharma, J. Kaur, S. Bahadur, S.D. Gupta and **R. Ralhan**. RAR β Loss: An early marker for oral precancer
17. M. Sawhney, N. Rohatgi, S. D. Gupta, A. Srivastava, N. K. Shukla, S. V. S. Deo and **R. Ralhan**. Altered expression of O⁶-Methylguanine-DNA Methyltransferase in Oral Cancer.
18. KC Nandipati, A. Srivastava, **R.Ralhan**, S.Chumber. Glutathione-S-Transferase M1 polymorphism as a susceptibility factor in development of oral lesions like leukoplakia, sub mucous fibrosis and lichen planus. *Cancer Detection and Prevention, 2004 Symposium Volume, S-105. 7th International Symposium on the Molecular basis of Predictive Oncology & Intervention Strategies*. Nice, France, February, 2004.
19. S. Arora, N. Chakravarti, M. Mathur, N.K. Shukla and **R. Ralhan**. Expression of G1-S modulators in oral cancer and correlation with tumor progression. **Cell Cycle, Chromosomes and Cancer, THE MIAMI NATURE BIOTECHNOLOGY WINTER SYMPOSIA**, Radisson Deauville Resort Hotel Miami Beach Florida, February 2004.
- 20-**25** **Anti-cancer drug development. 23rd Annual Convention of the Indian Association for Cancer Research, IACR, January, 2004.**
20. R. Ralhan. Gene Expression Gene Expression profiling of tobacco associated cancers of the upper aerodigestive tract.
21. A. Kumar, J. Kaur, R. Sharma, T.K. Chattopadhyay and R.Ralhan¹ Role of cell cycle regulators in esophageal tumorigenesis.
22. C.P. Prasad, S.A. Raju Begadi, S.D.Gupta, R.Prasad, A.Srivastava and R.Ralhan. Tissue Transglutaminase Expression in Human Breast cancer.
23. S.Arora, A.Matta, N.K.Shukla, SVS Deo and R.Ralhan. Identification of differentially expressed genes in oral squamous cell carcinoma by differential display.
24. J.Kaur, A.Srivastava, S.D. Gupta, R.Ralhan. Establishment of experimental model for oral cancer: Use for understanding the molecular mechanism of retinoid action.
25. **R. Ralhan**. Emerging diagnostic and prognostic molecular markers in Oral Cancer. **5th Congress of Asian Academy of Preventive Dentistry & 24th Annual Conference of Indian Society of Pedodontics & Preventive Dentistry**, Chandigarh, November, 2002.
- 26-**31** **2nd World Assembly Tobacco Counters Health, New Delhi, September 2002.**
26. R.Ralhan. Tobacco related oral precancer and cancer in India.
27. J.Kaur and R. Ralhan. Unraveling the molecular basis of tobacco associated oral tumorigenesis.
28. S.Soni, A.Matta, S.V.S.Deo, M.Mathur and R.Ralhan. Tobacco Triggers Angiogenesis.
29. A.Kumar, S.A.B.Raju and V.Kochupillai and R.Ralhan. Quitting tobacco through Sudarshan Kriya Yoga.
30. N.Rohatgi, Srivastava A and R.Ralhan. Guthka Chewing: An Emerging Epidemic.
- 31 S.A. Raju and R.Ralhan. Tobacco: Genetic susceptibility and Breast Cancer.
- 32-**34** **93rd Annual Meeting of American Association for Cancer Research, Moscone Convention Center, San Francisco, California, April 2002.**
- 32 R. Ralhan, S. Soni, N. Chakravarti, J. Kaur, M. Mathur and N.K. Shukla. Molecular pathogenesis of smokeless tobacco related human oral cancer.
- 33 N. Charkravarti, M. Mathur, S. Bahadur, R. Ralhan. Clinical significance of expression of retinoid receptors and cell cycle regulatory proteins in tobacco and betel related oral squamous cell carcinoma.
- 34 N. Charkravarti and R. Ralhan. Meeting on tobacco control research in India, organized by the Tata Institute of Fundamental Research and the World Bank, and sponsored by the World Bank, and the Office on Smoking and Health of the US Centers for Disease Control (CDC/OSH), April 2002.
- 35-**38** **Papers presented at 9th Asian Pacific Federation of Clinical Biochemistry & 28th Annual Conference of Association of Clinical Biochemists of India (APCCB), New Delhi, India, March, 2002.**

35. R Khanna, S Arora, R Mathew, M Mathur, NK Shukla and R Ralhan. Cyclin D1 overexpression: an adverse prognosticator in esophageal squamous cell carcinomas in Indian population.
36. N Charkravarti, M Mathur, NK Shukla and R Ralhan. RAR β : a putative molecular marker in tobacco abused oral SCCs.
37. S Soni, M Mathur, NK Shukla and R Ralhan. Cyclin D1 overexpression in oral cancer: correlation with tobacco chewing habit in Indian population.
38. HP. Pokharel, N Rohatgi, N Bhatla, A Kriplani, A Srivastava and R Ralhan. Correlation of circulating p53 antibodies and p53 protein expression with endometrial changes in tamoxifen treated breast cancer patients.
- 39-42 Papers presented at International Conference on Emerging Trends in Cancer Research, Jawaharlal Nehru University, New Delhi, India, March, 2002.**
39. N Chakravarti, M Mathur, S Bahadur, R Ralhan. Expression of RARs, RXR α , p53, 16^{INK4a} and p21^{Waf1/Cip1} proteins in tobacco and betel related oral squamous cell carcinoma.
40. S Soni, M Mathur, NK Shukla and R Ralhan. Involvement in angiogenesis in human oral cancer.
41. R Khanna, NK Shukla, TK Chattopadhyaya and R Ralhan. Molecular cloning of messenger RNAs differentially expressed in human esophageal normal and malignant tissues.
42. R. Khanna, N.K. Shukla, T.K. Chattopadhyay, R. Ralhan. Transcriptional Gene Expression profile of human esophageal squamous cell carcinoma in Indian population. Biotechnology Society of India, 2002.
- 43-46 Papers presented at 21st Annual Convention of Indian Association for Cancer Research, Bangalore, Jan. 2002.**
43. R Khanna, NK Shukla and R. Ralhan. Differential gene expression analysis of human esophageal squamous cell carcinoma.
44. S Soni, P Pande, SVS Deo and R Ralhan. Stromelysin-3 a putative target for ETS-1 in human oral squamous cell carcinoma.
45. N Chakravarti, M Mathur, S Bahadur and R Ralhan. Expression of retinoid receptors and cell cycle regulatory proteins in tobacco and betel related oral squamous cell carcinoma.
46. N Rohatgi, HP Pokharel, N Bhatla, A Kriplani, A Srivastava and R Ralhan. Evaluation of markers for detection of early endometrial changes in tamoxifen-treated breast cancer patients.
- 47 55 Papers presented at ASCO-Pan Asia Cancer Conference (A-PACC), New Delhi, India, Feb. 2002.**
- 47 S Soni, P Pande, M Mathur, SVS Rao and R Ralhan. Clinical significance of deregulation of Ets-1 transcriptional networks in human oral cancer.
- 48 R Khanna, R Mathew, S Arora, M Mathur, TK Chattopadhyay, NK Shukla and Ranju Ralhan. Putative diagnostic and prognostic molecular markers in human esophageal cancer.
- 49 N Charkravarti, M Mathur, S Bahadur and R Ralhan. Nuclear retinoid receptors: prognostic markers for betel and tobacco related human oral squamous cell carcinoma.
- 50 T Mukherjee, M Mathur, TK Chattopadhyay and R Ralhan. Vascular endothelial growth factor expression as a predictor of metastasis in squamous cell carcinoma of the esophagus.
- 51 N Rohatgi, N Chakravarti, NK Shukla and R Ralhan. Circulating p53-antibodies in various types of cancer.
- 52 J Kaur, N Chakravarti, M Mathur, NK Shukla and R Ralhan. Paradoxical expression of Bcl-2 in betel and tobacco related oral precancerous and cancerous lesions.
- 53 N Chakravarti and R Ralhan. Premalignant lesions-role of chemoprevention. Head and Neck Oncology Conference, AIIMS, New Delhi, Jan 2001.

- 54 N. Rohtagi, N. Chakravarti, N.K. Shukla and R. Ralhan. Serological detection of p53-antibodies in cancers of upper aerodigestive tract. **XXVIII Annual Meeting of the Indian Immunology Society & Symposium on Immune-Effector Mechanisms**, October, 2001.
- 55 N Chakravarti and R Ralhan. **Tobacco: Menace in 21st Century. National Conference and Workshop on Toxicology and Poison Control**, AIIMS, New Delhi, March 2001.
- 56-60 **Papers presented at The Impact of Biotechnology on Predictive Oncology and Therapy, October 2000 Geneva.**
- 56 P.Pande, S.Soni, N.Chakravarti, M. Mathur, N.K. Shukla, R.Ralhan. Prognostic impact of ets-1 overexpression in betel and tobacco related oral cancer.
- 57 N Chakravarti, M Mathur, S Bahadur, NK Shukla, C Rochette-Egly, R Ralhan. Diagnostic/prognostic implications of aberrant retinoic acid receptors expression in human.
58. R Mathew, S Arora, R Khanna, M Mathur, NK Shukla, R Ralhan. Putative molecular markers for esophageal squamous cell carcinoma.
- 59 R Mathew, R Kumar, M Mathur, NK Shukla, R Ralhan. Stromelysin overexpression in human esophageal squamous cell carcinoma: Potential clinical implications.
- 60 R Mathew, S Arora, AS Ebrahim, M Mathur, TK Chattopadhyay, R Ralhan. Microsatellite alterations at 3p, 2p and 16 q loci in Esophageal Squamous Cell Carcinoma: Association with cell cycle regulatory proteins.
- 61-73 **Papers presented at Tobacco Counters Health, New Delhi, December 2000.**
- 61 J Kaur, N Chakravarti, M Mathur, A Srivastava SVS Deo, R Ralhan. Gutkha / Pan Masala Associated Oral Submucous Fibrosis: Molecular Alterations In OSF Pathogenesis.
- 62 R Khanna, S Arora, R Mathew, S Arora, M Mathur, TK Chattopadhyay, NK Shukla and R Ralhan. Bidi Smoking Associated Esophageal Cancer In The Indian Subpopulation.
- 63 N.Chakravarti, M. Mathur, S. Bahadur, NK.Shukla, R. Ralhan. Tobacco Abused Oral Precancerous Lesions: Plausible Targets For Chemoprevention.
- 64 N. Nath, N.Chakravarti, M. Mathur, SVS Deo and R.Ralhan. Tobacco Use And Misuse: An Emerging Epidemic.
- 65 S. Soni, P.Pande, M.Mathur, NK Shukla and R.Ralhan. Tobacco Chewing: Effect On Clinicopathological And Molecular Parameters Of Oral Cancer Patients.
- 66 T.Mukherjee, TK Chatopadhyay, M.Mathur and R Ralhan. Molecular Alterations In Tobacco Associated Esophageal Cancer.
- 67 *Ranju Ralhan*. Biomarkers for oral cancer: Targets for gene therapy. **3rd Triennial Commonwealth Dental Association & 54th Indian Dental Association Congress**. Jan 2000, New Delhi.
- 68 Ranju Ralhan and Jatinder Kaur. Targeted delivery of thermosensitive liposomal taxol in tumors. **Frontiers in Pharmacology and Therapeutics in 21st Century. Indian Pharmacological Society**. Dec. 1999, New Delhi
- 69 Ranju Ralhan. Molecular Biology in Human Cancer. **XV Asia Pacific Cancer Conference**, Dec, 1999, Chennai.
- 70 Nitin Chakravarti, Meera Mathur, Sudhir Bahadur and Ranju Ralhan. Nuclear Retinoid Receptors: Potential Biomarkers for Early Intervention and Prevention in Oral Cancer. **XV Asia Pacific Cancer Conference**, Dec, 1999, Chennai.
- 71 Nitin Chakravarti, Meera Mathur, Nootan K. Shukla, Sudhir Bahadur and Ranju Ralhan. Alterations in Retinoid Receptors in Human Oral Neoplasia. **3rd Triennial Commonwealth Dental Association & 54th IDA Congress**, Jan 28-Feb 1, 2000, New Delhi.
- 72 Jatinder Kaur and Ranju Ralhan Antisense Hsp70 Oligomers Inhibit Proliferation And Trigger Cell Death In Oral Cancer Cells. **XV Asia Pacific Cancer Conference**, Dec. 1999, Chennai.
- 73 Robin Mathew, Sonia Arora, Meera Mathur, Tushar. K. Chattopadhaya and Ranju Ralhan

- Microsatellite alterations in Esophageal Squamous Cell Carcinoma. **XV Asia Pacific Cancer Conference**, Dec. 1999, Chennai, India.
- 74- **Papers presented at 18th Annual Convention of Indian Association for Cancer Research, AIIMS, and Feb.1999.**
77
- 74 Rajeeb K. Swain, Nootan K. Shukla, Meera Mathur and Ranju Ralhan Expression of P-glycoprotein in oral tumors: Relationship to p53 expression.
- 75 Prerna Pande, Nootan K. Shukla, Meera Mathur and Ranju Ralhan. Transcription factor Ets-1: A potential prognosticator for predicting regional metastasis in oral squamous cell carcinomas.
- 76 Monalisa Rao, Jatinder Kaur, Meera Mathur, Anurag Srivastava and Ranju Ralhan. Correlation of colligin and collagen expression in oral submucous fibrosis.
- 77 Jasbir Kaur and Ranju Ralhan. Antisense HSP70 oligonucleotide treatment induces cell death in oral cancer cells.
- 78- **Papers presented at 6th International Congress on Oral Cancer, New Delhi, Feb. 1998.**
88
- 78 *Ranju Ralhan*, Sandhya Agarwal, Prerna Pande, Neera Nath, Jasbir Kaur and Jatinder Kaur. Molecular alterations in oral tumorigenesis: Diagnostic / prognostic implications.
- 79 Rajeeb K. Swain, Meera Mathur, N.K. Shukla and *Ranju Ralhan*. Clinical drug resistance in oral cancer is multifactorial.
- 80 Nitin Chakravarti, Meera Mathur, Sudhir Bahadur and *Ranju Ralhan*. Differential expression of nuclear retinoid receptors in human oral tumorigenesis.
- 81 Jatinder Kaur and *Ranju Ralhan*. Liposomal drugs: A novel approach for circumvention of MDR in oral Cancer.
- 82 Molina M. Sewal, Rimple Bahl, Neera Nath, Meera Mathur, Nootan K. Shukla and *Ranju Ralhan*.
- 83 Prerna Pande, Meera Mathur, Nootan K. Shukla and *Ranju Ralhan*. Alterations cell cycle regulatory proteins in human oral tumorigenesis.
- 84 Monalisa Rao, Jatinder Kaur, Meera Mathur, Anurag Srivastava and *Ranju Ralhan*. Molecular alterations in Oral Submucous Fibrosis.
- 85 Jasbir Kaur, Jatinder Kaur, Anurag Srivastava and *Ranju Ralhan*. Significance of HSP70 overexpression in pathogenesis oral cancer.
- 86 Sandhya Agarwal, Meera Mathur, Anurag Srivastava and *Ranju Ralhan*. Differential expression of MDM2 in human oral tumorigenesis.
- 87 Sonia Arora, Meera Mathur, Tushar K. Chattopadhyay and *Ranju Ralhan*. Esophageal cancer: Correlation of molecular alterations with dietary factors.
- 88 Neera Nath, Gulam Nabi, Anurag Srivastava and *Ranju Ralhan*. GST MI: A Susceptibility factor for oral leukoplakia in the Indian population.
- 89- **Presented at 10th International Congress of Immunology held in New Delhi Nov. 1998.**
91
- 89 Sonia Arora, Molina M. Sewal and Ranju Ralhan. Detection of circulating p53 antibodies in esophageal cancer patients: Relationship with p53 and HSP70 alterations.
- 90 Jatinder Kaur, Dayanand Sharma and Ranju Ralhan. Use of thermosensitive liposomes for reversal of multidrug resistance.
91. Ranju Ralhan, Neera Nath, Sandhya Agarwal, Jasbir Kaur and N. K. Shukla. Serum p53 antibodies as early markers of oral cancer: Correlation with p53 alterations.
92. Prerna Pande, Meera Mathur, Nootan K. Shukla and *Ranju Ralhan*. Ets1: a plausible marker for regional spread and metastasis. **Presented in the symposium on Invasion and metastasis held in Nice, France in Oct.1998.**
93. *Ranju Ralhan*, Jasbir Kaur and Anurag Srivastava. Diagnostic significance of p53 protein overexpression and circulating p53 antibodies in tobacco related oral leukoplakia and cancer. **Presented at XVI International Congress in Clinical Chemistry held in London U.K. in July 1996.**
94. Dayanand Sharma, Tamiz Chelvi and *Ranju Ralhan*. **15th Annual Convention of Indian Association for Cancer Research and symposium on "New Strategies to Fight Drug Resistance in cancer Therapy"**. Feb. 22-24 1996, at Mysore.
- 95 Tamiz Chelvi, Dayanand Sharma and *Ranju Ralhan*. **4th International Symposium of Biochemical Roles of Eukaryotic Cell Surface Macromolecules (ISCM)**, 6-10 Jan. 96 Department of

- Biochemistry, University of Delhi, South Campus at National Institute of Immunology, New Delhi.
96. Dayanand Sharma, Tamiz Chelvi, Jatinder Kaur, Ketaki Chakarborty, Munshi N. Tapas K. De, Amarnath Maitra and *Ranju Ralhan*. Preparation and size modulation of polymeric nanoparticles through microemulsion & their use in drug targeting. **7th Biennial Conference on Surfactant, Emulsions and Biocolloids**. Dec. 9-11, 1995 department of Chemistry, Vishva Bharati, Shantiniketan, Calcutta.
97. Agarwal S., Mathur M., Srivastava A. and *Ranju Ralhan*. Expression of p53 and mdm-2 protein in Human oral carcinomas, presented at **15th Annual convention of Indian Association of Cancer Research and National Symposium on New Strategies to fight drug resistance in cancer therapy** held in Karnataka in Feb. 1996.
98. Dhulkotia D., Jain V., Das S.N., Shukla N.K. and *Rang Ralhan*. P-glycoprotein: A plausible marker of multidrug resistance in Human oral Cancer.
99. *Ranju Ralhan* and Jasbir Kaur. Prognostic/significance of p53-HSP70 complexes in human cancer presented at the **12th Asia Pacific Cancer Conference** held in Singapore in Oct. 1995.
100. Satya N. Das, Vibhor Jain, Nootan K. Shukla and *Ranju Ralhan*. DNA cell cycle and Multidrug Resistance Gene expression in squamous cell carcinoma of the oral cavity. Presented at **7th Federation of Asia Biochemistry and Molecular Biology Congress**, held in Australia in Oct. 1995.
101. Poonam Salotra, D.Chauhan, *Ranju Ralhan* and Rakesh Bhatnagar. TNF-alpha induces preferential expression of stress proteins in virulent promastigotes of *Leishmania donovani* presented at **Annual meeting of American Society for Microbiology** in USA in 1995.
102. Dayanand Sharma, Tamiz P.Chelvi and *Ranju Ralhan*. Radiothermochemotherapy of murine melanoma with radiation thermosensitive liposome encapsulated melphalan and hyperthermia. Recent Advances in Drug delivery techniques and testing. Dec. 1995, Bombay.
103. Tamiz P. Chelvi, Dayanand Sharma and *Ranju Ralhan*. Liposome mediated modulators of MDR and enhancement of activity of taxol in murine melanoma. Recent advances in Drug delivery techniques & testing. Dec. 1995, Bombay.
104. *Ranju Ralhan* and Jasbir Kaur. Tumor suppressor gene p53 expression in leukoplakia and oral cancer in India. **Presented at 7th p53 workshop held in Canada in June 1994.**
105. Tamiz P. Chelvi and *Ranju Ralhan*. Use of natural lipid derived heat sensitive liposomes for thermochemotherapy for fibrosarcoma presented at III Liposome **Research Days Conference** held in Canada in June 1994.
- 106-110 Papers presented at International Union of Biochemistry and Molecular Biology held in New Delhi in Oct. 1994.**
106. *Ranju Ralhan* and Jasbir Kaur. HSP70 overexpression in human squamous cell carcinomas of oral cavity. P5-112 pp188 (Abst).
107. Jasbir Kaur and *Ranju Ralhan*. Abnormalities in tumor suppressor gene p53 in human oral cancer. p1-183 pp46 (Abst).
108. Tamiz P. Chelvi, S.K. Jain and *Ranju Ralhan*. A novel approach of designing temperature sensitive liposomes from natural lipids for anticancer drug delivery. p11-131 pp420 (Abst).
109. Gautam Sarkar, Murli Narayan and *Ranju Ralhan*. Mechanisms of drug resistance in human oral cancer. p1-184 pp46 (Abst).
110. Poonam Salotra, *Ranju Ralhan* and Rakesh Bhatnagar. Differential expression of stress proteins in virulent and avirulent promastigotes of *Leishmania donovani* p7-213 pp271 (Abst).
- 111-114 Papers presented at XVI International Cancer Congress held in New Delhi in Nov. 1994.**
111. *Ranju Ralhan* Jasbir Kaur and Murli Narayan. Overexpression of 70kDa stress protein in squamous cell carcinomas of human uterine cervix.
112. Tamiz P. Chelvi, S.K. Jain and *Ranju Ralhan*. Thermochemotherapy of murine melanoma using heat sensitive liposomes containing melphalan and hyperthermia.
113. Jasbir Kaur, Gautam Sarkar, Anurag Srivastava and *Ranju Ralhan*. Immunological evidence for the association of p53 with a heat shock protein in squamous cell carcinoma of oral cavity.
114. Murli Narayan, Jasbir Kaur, Poonam Salotra, Shyam S. Chauhan, N.K.Shukla and *Ranju Ralhan*. Multidrug resistance in oral SCC is mediated by the multidrug transporter.

- 115 Papers presented at 3rd International Congress on Oral Cancer held in Madras in Jan. 1994.**
- 117**
- 115 *Ranju Ralhan* and Jasbir Kaur. In vitro cytotoxicity assay for prediction of thermochemosensitivity of human oral squamous cell carcinoma.
- 116 Murli Narayan, Jasbir Kaur, Shyam S. Chauhan, N.K. Shukla and *Ranju Ralhan*. P-glycoprotein overexpression: A plausible mechanism for drug resistance in human oral cancer.
- 117 Jasbir Kaur, Anurag Srivastava and *Ranju Ralhan*. p53 protein overexpression : An early biomarker for oral cancer.
- 118 Tamiz P. Chelvi, S.K. Jain and *Ranju Ralhan*. Cytotoxic effect of thermosensitive liposome encapsulated melphalan, hyperthermia and radiation on murine melanoma. Presented at **XIII Annual convention of Indian Association for Cancer Research at Hyderabad** in Jan. 1994.
- 119 *Ranju Ralhan*. Oncogenes and Tumor suppressor genes. **Invited CME lecture during Mid Term Conference of Indian Association of Surgical Oncology** in Sept. 1993 at New Delhi.
- 120 *Ranju Ralhan*. Biochemical aspects of cancer. Invited CME lecture during course on Microwave Hyperthermia and Cancer during **4th International Symposium on Recent Advances in Microwave Technology** in Dec. 1993 in New Delhi.
- 121 *Ranju Ralhan*. Biomembranes and Signal Transduction Invited to deliver a series of six CME lectures at Centre for Biotechnology. **JNU New Delhi** in Sept. Oct. 1993.
- 122 Sarita Sharma and *Ranju Ralhan*. Effect of hyperthermia on protein phosphorylation in cervical carcinoma cells. **Presented at Annual Meeting of Indian Society of cell Biology**. Delhi, February 1992.
- 123 Sarita Sharma and *Ranju Ralhan*. A potential predictive assay for evaluation of tumour response to hyperthermia. **Presented at Annual Meeting of Association of Clinical Biochemists of India**, Delhi, Feb. 1992.
- 124 Tamiz P. Chelvi, P.C. Ghosh and *Ranju Ralhan*. Design of temperature sensitive liposomes as anticancer drug carriers. **Presented at 4th National Symposium on Liposome Research** Delhi, March 1992.
- 125 *Ranju Ralhan* and Alka Agarwal. An enzyme immunoassay for measurement of 70 KD hsp presented at **82nd Annual Meeting of American Assoc. for Cancer Research** held at Houston, U.S.A. in May, 1991.
- 126 *Ranju Ralhan*. Protein tyrosine phosphatases. Presented at **‘Brain storming session on Cancer Research** held in Bombay in 1991.
- 127 Jasbir Kaur and *Ranju Ralhan*. HSP70 as a predictor of human tumour response to hyperthermia. **Presented at 52nd Annual meeting of Indian Immunology Society** in 1991 in New Delhi.
- 128 *Ranju Ralhan*. Identification of heat stress induced proteins in rat mammary tumour cells. **Presented at XV Annual conference of Environmental Mutagen Society** of India, held at Bombay in 1990.
- 129 *Ranju Ralhan*, D. Court and G.S. Johnson (1988). Characterization of putative glucocorticoid receptor binding sequence of mouse mammary tumor virus using an open reading frame vector. **Presented at International Conference on Biomembranes in Health and Disease**, held at Lucknow in 1988.
- 130 *Ranju Ralhan* and G.S. Johnson. Effect of heat shock and glucocorticoids on mouse mammary tumor virus RNA and protein synthesis. Presented at : 57th Annual Meeting of Society of Biological Chemists (India) held at Delhi in 1988.
- 131 Madhav Bhatia, *Ranju Ralhan* and Shail K. Sharma. Effect of ascorbate on the binding of 3H etorphine and 3H-DADLE in NG 108-15 hybrid cells and on second messenger. **Presented at International Conference on Biomembranes in Health and Disease at Lucknow** in Nov. 1988.
- 132 Shail K. Sharma, *Ranju Ralhan* and Madhav Bhatia. Morphine receptors as regulators of adenylate cyclase. **Proceedings of Indo-US symposium on “Neuroreceptor plasticity and Brain function”**, held at All India Institute of Medical Sciences, New Delhi April 06-10, 1987.
- 133 Feasibility of arabinogalactan as possible screening antigen in early detection of leprosy. Arati Roy, Alka Agarwal and *Ranju Ralhan*. **XI Annual Conference and Symposium on Indian Immunology Society** held at Hyderabad in Jan. 1985.
- 134 Serodiagnosis of lepromatous leprosy using phenolic glycolipid. *Ranju Ralhan*, A.H. Band, Arati Roy, A.K. Sharma and G.P. Talwar. **53rd Annual Meeting of Society of Biological Chemists of India** held in New Delhi in Oct. 1984.
- 135 Detection of antibodies against arabinomannans in patients of leprosy and tuberculosis by an enzyme immunoassay. *Ranju Ralhan*, AH Ban, G.P. Talwar, **XIII International leprosy Congress** held at

- New Delhi in Feb. 1984.
- 136 Isolation of plasma membranes from human normal and leukemic granulocytes. Identification of a receptor for IgG. S.M. Zingde, A.M, Mungikar, V.Chhajlani, *R.Ralhan* and B.P. Gothoskar, **International Conference on Current Trends in Cancer Research held in Chittaranjan National Cancer Research Centre**, Calcutta in March 1982.
- 137 Ets-1 and P-glycoprotein: Putative regulators of cell proliferation and survival in betel and tobacco related human oral cancer. Shilpi Soni, Meeta Mathur, N.K. Shukla, SVS Deo and Ranju Ralhan. **7th International Congress on Oral Cancer**, The Netherlands in April 2001.

SHORT TERM COURSES:

- Nucleic Acid Synthesis conducted by ICGEB.
- Computer applications in Biotechnology conducted by Bio-Informatics Centre, JNU Delhi.

TEACHING :

Eighteen Years of Teaching experience in Biochemistry for Undergraduate (MBBS, B.Sc. (Hons.) Human Biology) and Postgraduate (M.Sc., M.D., Ph.D) students.

Continuing Medical Education Program

Actively participated in introducing newer Problem Based Learning Modules for Undergraduate and Post Graduate Teaching (MBBS, M. D., B. Sc.(Hons.), Human Biology, M. Sc. and M. Biotechnology) to develop the analytical skills of the students. The implementation of Problem Based Learning for Medical Undergraduates and Post Graduates has added a new dimension to training of Junior and Senior Demonstrators.

Actively participated in organizing various CME Workshops and Courses, Development of Curriculum and Curriculum Material. Delivered Invited Lectures in several CME programs in Biochemistry, Molecular Biology and Cancer.

Course Convenor :

Teaching coordinator for:
M.Sc. Biochemistry
M.D. Biochemistry
M. Biotechnology (Biochemistry course)
MBBS I year (Biochemistry)
B. Sc. (Hons.) Human Biology

Examiner for Courses in several Medical Colleges and Universities:

Ph. D Biochemistry
M.Sc. Biochemistry
M.D. Biochemistry
MBBS I year (Biochemistry)
B. Sc. (Hons.) Human Biology

GUIDANCE :

Chief Supervisor/ : 21 Ph.D students
Co-Supervisor : 16 M.Sc. students
: 6 M.D. /M.S. students

Ph.D Awarded

1. **Tamiz P. Chelvi** “Effect of hyperthermia, radiation and temperature sensitive liposome encapsulating anticancer drug on murine tumors. January 1995
2. **Jasbir Kaur**”Tumor suppressor gene p53 and its expression in human oral tumorigenesis” Feb. 1996
3. **Sandhya Agarwal** “Transcriptional regulatory proteins in human precancerous and cancerous oral lesions: genetic alterations and expression “Oct. 1998
4. **Prerna Pande** “Expression of tumor suppressor genes and transcription factors in human oral tumorigenesis”, November, 1999
5. **Nitin Chakravarti** “Role of retinoids and their receptors in the development of oral cancer” April 2003
6. **Shilpi Soni** “Identification and characterization of differentially expressed genes in human oral cancer” August 2003
7. **Jatinder Kaur**”Establishment of in vitro model system to identify differentially expressed genes in precancerous and cancerous oral lesions” September 2003
8. **Rinu Khanna** “Identification and characterization of differentially expressed genes in human esophageal cancer”, November, 2003.

*** Co-Supervisor**

9. ***Rima Dada** “Genetic analysis of male infertility” July 2003
10. ***Madhav Bhatia** “Opioid receptor mediated regulation of GTPase and second Messenger generating enzymes” Dec. 1992
11. ***Dhara Ballabh Dhaulakhandi** “Structural and genomic characterization of the organism presumed to cause rhinosporidiosis” August 2002
12. ***T. Sivakumar** “Cytogenetic and molecular studies of retinoblastoma” 2002
13. ***Rashmi Talwar** “Cytogenetic and molecular study of chronic myeloid leukemia (CML)”

Ph.D (Under Submission)

1. **B.S.A.Raju** “Molecular analysis of alterations in breast cancer associated genes”
2. **Chhavi Sharma** “Molecular basis of chemoprevention in oral carcinogenesis”
3. **Nidhi Rohtagi** “Gene expression profiling of tobacco induced cell cultures from oral precancerous and cancerous lesions”
4. **Meenakshi Sawhey** “Molecular Basis of Tobacco associated oral carcinogenesis”
5. ***Renita Bhamrah** “Prognostic value of epidermal growth factor receptor in breast cancer”
6. **Ajay Matta** “Characterisation and Functional Analysis of Differentially Expressed Genes in Oral Cancer”
7. **Tasneem** “Characterisation and Functional Analysis of Differentially Expressed Genes in Esophageal Cancer”
8. **Samir Mirza** “Molecular Pathogenesis of Breast Cancer”.

M.D. /M.S Awarded

1. **Dr. Amit Verma** “Analysis of Expression of MASP2, MEMD and ETS-2 proteins in Human Esophageal Cancer” June, 2004
2. **Dr. Kalyana Chakravarti Nandipati** “Relationship between genetic polymorphism in drug metabolizing enzyme, GSTM1 and risk of developing oral pre-cancerous lesions among the consumers of tobacco and chewing products and management of pre-cancerous lesions and follow-up, November, 2003.
3. ***Hanoon P. Pokharel** “Evaluation of endometrial changes in tamoxifen treated women by transvaginal sonography, sonohysterography, hysteroscopy and endometrial aspiration and correlation with p53 expression” 2002
4. ***GH. Nabi** “Glutathione-S-Transferase M1 genotype as a susceptibility factor for leukoplakia in tobacco users in North Indian population.” December 1996
5. **Gautam Sarkar** “Evaluation of GST gene status and expression in human squamous cell carcinoma or oral cavity and in normal oral tissues” June 1995

6. ***Arup K. Saha** “Estimation of serum tumour necrosis factor in patients with oral carcinoma and its correlation to various factors” November 1993

M.Sc. Supervisor (Awarded)

1. **Sarita Sharma** “Effect of Thermal Stress on protein phosphorylation in malignant cells” 1992
2. **Murli Narayanan** “Multidrug resistance gene expression in squamous cell carcinoma of oral cavity” 1994
3. **Vibhor Jain** “Expression of multidrug resistance gene p-glycoprotein in human oral cancer” 1995
4. **Dayanand Sharma** “Targeted drug delivery in murine melanoma using thermosensitive liposome encapsulated anticancer drug with hyperthermia” 1996
5. **Deepak Gaur** “Study of tumour suppressor gene p53 in human esophageal cancer” 1996
6. **Vaishali Gupta** “Expression of glutathione S-transferase pi in human oral cancer cells” 1996
7. **Jatinder Kaur** “Novel Taxol Formulation: Polymeric nanoparticles encapsulated taxol for drug delivery in murine tumors” 1997
8. **Sonia Arora** “Expression of MDM2 oncogene and tumor suppressor gene p53 in human esophageal cancer” 1998
9. **Rimple Bahl** “Expression of cell cycle regulatory proteins WAF1 and p16 in human esophageal cancer” 1998
10. **Monalisa Rao** “Expression of Colligin in Oral Submucous Fibrosis: Correlation With Expression of Collagen, Tumor Suppressor Gene p53 and Retinoic Acid Receptor β ” 1999
11. **Rajesh Kumar** “Expression of Matrix Metalloproteinases in human esophageal cancer” 2000
12. **Tina Mukherjee** “Alterations In Angiogenic Factors In Human Esophageal Cancer” 2001
13. **Anupam** “Characterisation of Human esophageal Squamous cell carcinoma cell line” 2002
14. **Sharmistha Samantaray** “Characterisation of differentially expressed genes and expression of matrix metalloproteinases in human esophageal squamous cell carcinoma” 2003.
15. **Garima Gupta** “Study of sperm protein 17 in Human Esophageal Squamous Cell Carcinoma”.
16. **Binod Kumar** “Polymorphisms at Cyclin D1, XRCC1 and GSTM1 Gene Loci as risk factors for oral precancerous lesion”.

International Collaborations :

I. *Indo-French collaborative Project: Study of Genetic Alterations in Precancerous and Cancerous Oral Lesions.*

Two human squamous cell carcinoma (SCC) cell lines have been established in the nominee's laboratory from surgical specimens of untreated oral carcinomas obtained from a tobacco consumer and a non consumer of tobacco having viral (HPV) infection by sequential differential trypsinization of primary cultures. The epithelial cells (free of fibroblasts) have been subcultured at regular intervals. Characterisation of these two cell lines including growth parameters, anchorage - independent growth, chromosome analysis (karyotyping), epithelial cell markers, DNA flow cytometry, tumor suppressor gene and oncogene profiles has been carried out in the nominee's laboratory.

A gene therapy approach that targets the p53 pathway has been developed with French collaboration. Chimeric tumor suppressors were designed that are resistant to inactivation in tumor cells. Altered ligand binding domains of hormone receptors (estrogen and glucocorticoids) that are insensitive to the physiological ligand concentration but are induced by synthetic ligands, dexamethasone and tamoxifen were fused to chimeric tumor suppressor p53 (CTS). The recombinants have been constructed and shown to produce wild type p53 protein in oral tumor cells *in vitro*. These have been tested for their ability to regulate transcription in ligand dependent manner using an artificial p53 reporter in transfection assays in oral cancer cell lines. These chimeric tumor suppressors are being evaluated for their efficacy for gene therapy of oral cancer. Two oral cancer cell lines (of Indian origin) established in the nominee's laboratory are

being used for evaluating the efficacy of these chimeric tumor suppressors in pre-clinical studies for potential use in gene therapy.

- II. Development of p53-Elisa diagnostic kit for early diagnosis of cancer. Indo-French Industry-Institution joint bridge project by Indo-French Centre.

Indo German Collaboration

Role of genomic instability due to alterations of recombination factors p53 and BRCA1 in the pathogenesis of breast cancer.

State of the Art report prepared for Indo French Centre on Drug Delivery and Slow Delivery of Drugs. Assisted Dr. A. Jayakrishnan in preparing the section on Liposomes in Drug Delivery.

CANCER BIOLOGY, GENOMICS, FUNCTIONAL GENOMICS, MOLECULAR DIAGNOSTICS AND EPIDEMIOLOGY

Research Contributions

I am a molecular biologist of more than 18 years standing and has established a well organized molecular oncology laboratory to undertake cutting edge research in cellular, molecular, cytogenetic, genomic and functional genomic aspects of cancer. My group has made outstanding contributions in understanding the molecular mechanisms and pathobiology of tobacco induced cancers of prime importance in India: oral and esophageal cancer. Our work on identification of genetic and molecular alterations in these cancers and their association with dietary and environmental risk factors led to identification of candidate molecular markers for these malignancies.

Our salient contributions include:

- i. *Establishment of experimental model for oral cancer.*
- ii. *Identification of molecular markers for early diagnosis of oral and esophageal cancer*
- iii. *Identification of novel differentially expressed genes in oral and esophageal cancer.*
- iv. *Designed novel gene therapy strategies for oral cancer.*
- v. *Developed immunodiagnostic assay for serological analysis of p53.*
- vi. *Understanding molecular basis of multidrug resistance and designing liposomal drug formulations for circumvention.*
- vii. *Tobacco and oral health*

Our most significant achievement is the establishment of human oral cancer cell lines (and cell cultures from precancerous lesions) that serve as *in vitro* experimental model for oral cancer. No oral cancer cell lines of Indian origin are available in International/National Cell Culture Collections. Hence, this cell line is of immense value for other researchers working in oral carcinogenesis, to understand differences in molecular pathogenesis of smokeless tobacco related oral cancer in Indian population in comparison with the West (US PATENT No. 6,730,514.).

I have established molecular oncology laboratory at AIIMS, where I have co-organized several workshops for training postgraduates from various National Cancer laboratories in advanced molecular biology techniques including differential display-RTPCR.

Using these techniques several cDNAs differentially expressed in betel and tobacco related oral cancer (compared to normal oral epithelial cells) have been identified, amplified, and are being characterized in depth. *Cell cultures of leukoplakia and OSF are being used to identify new genes differentially expressed in development of oral cancer.* The highlight of my current research achievement has been the identification and characterization of novel genes associated with oral and esophageal carcinogenesis. These genes will provide new targets for designing more effective treatment strategies for oral cancer (**Molecular Carcinogenesis 2004, Genomics 2003**) **These clones will be used to design cDNA-arrays for potential clinical use (diagnostic, prognostic or predicting response to therapy).**

My pioneering clinical research during the past decade has led to identification of candidate predictive, diagnostic and prognostic molecular markers for oral and esophageal cancer (30 publications including *Oncogene*, *J Path.*, *I.J.C*, *Clin. Can Res.*). The lack of a specific molecular marker for early diagnosis of oral cancer limits the detection of the disease in early stages. Though the precancerous lesions, leukoplakia and OSF can be clinically identified, there are no biomarkers to predict lesions which are at high risk of transition to malignancy. Thus putative biomarkers identified (pRb, p53, Ets-1, serum p53-antibodies) in my laboratory are of vital clinical importance. I am the coordinator of a Multicentric study being conducted at four centres in India on Evaluation of Molecular Markers for Oral Cancer for translation of her work on molecular diagnostic markers for oral precancer and cancer from laboratory to clinic – bench to bedside.

Screening of oral leukoplakia to predict lesions that are at high risk of progressing to malignancy is of paramount important for early intervention (chemoprevention). Overexpression of retinoic acid receptor α (RAR α) and down regulation of RAR β were shown to occur in early stages of oral carcinogenesis and may serve markers as for predicting precancerous lesions at high risk of malignant transformation (*International Journal of Cancer* 2003, 2001). These contributions have significantly increased our understanding of the biology of tobacco associated cancers and paved the way for designing more effective strategies for clinical management of cancer.

I am also the Co-ordinator of the first molecular epidemiology study in the country to determine the relationship between polymorphisms in drug metabolizing enzymes, CYP1A1 and GSTM1 and the risk of developing oral precancer and cancer among consumers of tobacco and chewing products in the community.

We have designed two new approaches for potential use in gene therapy of oral cancer

(i) **Antisense oligonucleotides:** Abrogation of HSP70 expression using antisense HSP70 oligomers induced apoptosis in oral cancer cells (*IJC* 2001). ***Reuters health information Inc, a premier health and medical global news service has quoted this work as a breaking news story in health care, for being the first report to demonstrate role for a heat shock protein in apoptosis.***

(ii). **Ligand Inducible Chimeric Tumour Suppressor p53 (LI-CTS):** Transdominant (LI-CTS) p53 constructs (developed with French collaboration) tested in transient transfection assays in oral cancer cell lines and xenografts in nude mice induced ligand dependent transactivation of p53 and cell death by apoptosis showing promise for *gene therapy of oral cancer* (*Oncogene* 2000).

We have developed an immunoassay (p53-ELISA) for detection of circulating p53 antibodies (*Clin. Cancer Res.*, 1998, *I.J.C.* 2000). This assay has been used to detect p53-antibodies in several human cancers: oral, esophageal, breast, uterine cervix and prostate (***Oral Oncology*, 2001**) and has shown promise to monitor the clinical course of the disease. The simple immuno assay has been used for screening of normal subjects and predicting (i) high risk asymptomatic heavy tobacco/consumers (ii) individuals in early preclinical phase prior to disease manifestation and (iii) premalignant lesions at high risk of transition to malignancy. The p53 antibody detection by serological assay may serve as useful, cost effective, non-invasive surrogate marker for p53 alterations in human cancers. This assay is presently being validated for commercial use.

Our work on understanding the molecular basis of multidrug resistance in oral cancer has been widely acclaimed (*I.J.C.* 1999, 1997a, b). This work has led to *designing new strategies for circumvention of drug resistance using nanoparticles encapsulated taxol for targeted drug delivery*. Natural lipid derived thermosensitive liposomal anti cancer drug formulations have been used for heat mediated targeted drug delivery for designing effective multi-modality treatment regimes and circumvention of drug resistance (*Oncol. Res.* 1999).

The changing patterns of tobacco use, especially with regard to the alarming upsurge in gutkha/pan masala consumption, particularly among women and young adolescents is a major concern for health professionals. I have actively contributed towards concerted global efforts to combat the raging tobacco epidemic as Faculty Fellow of International Congress on Oral Cancer and Co-organizer of World Assembly on Tobacco Counters Health, promoting mass media education of hazards of tobacco use in community. My contributions in evolving effective strategies to combat the tobacco epidemic will pave the way for better oral health

