D E V A R A J A N K A R U N A G A R A N

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RESIDENCE : B-8 (FF) LAKE VIEW ROAD, INDIAN INSTITUTE OF TECHNOLOGY MADRAS, CHENNAI – 600 036
PHONE: 044 22576126 MOBILE; 9789096126

Born: 13-11-1955 Sex: Male

EDUCATION

Ph.D Biochemistry (1991) "Biochemical studies during germination of seeds of horse gram (*Macrotyloma uniflorum*): Food reserve mobilization and its regulation" Sri Krishnadevaraya University, Anantapur.
M.Phil Biochemistry (1984) "Biochemical studies on *Aspergillus terreus* toxicosis" University of Madras, Chennai.
M.Sc Biochemistry (1979) I Class, 3-yr course in the Faculty of Medicine, JIPMER, Pondicherry
B.Sc Chemistry (1976) I Class, University of Madras, Chennai

PROFESSIONAL EXPERIENCE

Years	Position	Institution
1979-1986	Lecturer in Biochemistry	PSG College of Arts and Science, Coimbatore
1986-1992	Senior Lecturer in Biochemistry	PSG College of Arts and Science, Coimbatore
1992-1995	Post-doctoral Fellow	The Weizmann Institute of Science, Israel
1995-1997	Project Investigator	MD Anderson Cancer Center, Houston, U.S.A.
26th Dec. 1997-25th Aug. 2000	Scientist E-I	Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram
26th Aug. 2000-30th Nov. 2002	Scientist E-II (on deputation) under Programme support by the Department of Biotechnology, Government of India	Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram
1st Dec. 2002-25th Dec. 2002	Scientist E-I	Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram
26th Dec. 2002-31st Aug. 2006	Scientist E-II	Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram

LABORATORY TRAINING COURSES/WORKSHOPS ATTENDED

3-day course (September, 1995) in the safe handling of radioactive materials in research and clinical laboratories, MD Anderson Cancer Center, Houston, U. S. A.
FEBS Advanced Laboratory Course on Biomembranes and Signal Transduction (Jan. 31-Feb. 11, 1994) Utrecht, The Netherlands.
Practical training course (I semester of 1992/93) in Transmission and Scanning Electron Microscopy and attended a workshop on "Immuno gold labeling" at the Electron Microscopy Unit of The Weizmann Institute of Science, Israel.
Workshop on DNA Microarray Technology IISc, Bangalore, (19-20 Feb. 2001)
Workshop on Open Access, M S Swaminathan Research Foundation, Chennai, 6-8 May 2004
International Research Workshop, The University of New South Wales, Sydney, Australia, 20-22 Feb. 2008

PROFESSIONAL MEMBERSHIPS

Active member, American Association for Cancer Research (AACR)
Life Member, Indian Association for Cancer Research.
Life Member, Society of Biological Chemists (India)
Life Member, Society of Biotechnologists (India).
Life member, Indian Society of Cell Biology

AWARDS/HONORS RECEIVED

C. R. Krishnamurti Lecture Award for the year 2003 by the Society of Biological Chemists (India)
Visiting Research Fellow, The University of New South Wales, Sydney, Australia

RESEARCH GUIDANCE

Areas of research interest: Cancer biology, signal transduction, apoptosis, miRNA

Postdoctoral research associates/scientists trained: Drs. Ruby John Anto, Asha Nair, Santhosh Kumar, Srinivas, Priya Srinivas, Anand Setty Balakrishnan, Marie-Lue Antony, Ramalingam, Kamakshi, Sakthivel, Geetha, Praveen and Sri Priya.

Guided more than 40 MSc students and 10 B Tech students for their project works

MS students guided: Rao Srinivasa Rao, Purushothaman, Manisha Juneja

PhD students guided:

Sl.No.	*Name of the PhD student*	*Title of the PhD thesis*	*Subject*	*Year of submission*
1	Tessy T Maliekal	Molecular Alterations of Smad 2 and Smad 4 in human cervical cancer	Biotechnology	2002
2	M. Venkatraman	Studies on the regulation of nuclear factor kappa B in human cervical cancer	Biotechnology	2003
3	R. Rashmi	Molecular mechanism of curcumin action	Biochemistry	2004
4	Suby Oommen	Effects of major organosulfur compounds from garlic on proliferation and apoptosis of cancer cells	Biotechnology	2005
5	Marie Lue Antony	Role of TGF-β signaling in ovarian cancer	Biotechnology	2007
6	Goodwin Jinesh	A study on the nuclear abnormalities induced by smad3 or RelA in HeLa cells	Biotechnology	2008
7	Manishankar Babu	Upstream and downstream regulators of NF-κB in human cervical cancer	Biotechnology	ongoing
8.	Maitreyi, S	Cancer Biology	Biotechnology	Ongoing
9.	Savita, B	Cancer Biology	Biotechnology	Ongoing
10.	Prabhavathy Devan	Cancer Biology	Biotechnology	Ongoing
11.	Prabhakar, BN	Cancer Biology	Biotechnology	Ongoing
12.	Anusha Sathyanarayanan	Cancer Biology	Biotechnology	Ongoing
13.	Karthik Subramanian	Cancer Biology	Biotechnology	Ongoing
14.	Pooja Thacker	Cancer Biology	Biotechnology	Ongoing

EDITORIAL BOARD MEMBER OF JOURNALS

"Cell Research" an international peer-reviewed journal in English at http://www.nature.com/cr/index.html

REVIEWER FOR JOURNALS

Carcinogenesis, Cell Research, International journal of cancer, International Archives of Bioscience, Indian Journal of Biochemistry and Biophysics, Indian Journal of Experimental Biology, Indian Journal of Microbiology, Current Science, Genes chromosomes and Cancer, Phytochemistry, Cancer Letters, Molecular Cancer, BMC Complementary and Alternative Medicine, BMC Cancer, Mini reviews in medicinal chemistry, PLOS one, Nutrition, International Journal of Cell Biology

RESEARCH COLLABORATORS (INTERNATIONAL)

Dr. Bharat B. Aggarwal, MD Anderson Cancer Center, Houston, U. S. A.
Rajendra S. Bhatnagar, Professor of Bioengineering (emeritus), University of California, San Francisco and Berkeley, U. S. A.

RESEARCH COLLABORATORS (INDIAN)

1. Dr. P. R. Sudhakaran, Department of Biochemistry, University of Kerala
2. Dr. Balaraman Nair, Doctor's Diagnostic Centre, Thiruvananthapuram
3. Dr. Radhika Srinivasan, PGIMER, Chandigarh
4. Dr. S. Nagini, Annamalai University, Chidambaram
5. Dr. K. N. Rajasekaharan, Department of Chemistry, University of Kerala

RESEARCH CONTRIBUTIONS

Postdoctoral research

A monoclonal antibody against neu differentiation factor/heregulin (7D5) is marketed by U. S. Companies

A novel concept proposed is that ErbB-2 (the second member of EGFR family) acts as the preferred heterodimeric partner of all the known members of the EGFR family, and at least, part of the transforming ability of an over expressed ErbB-2 is due to transactivation of growth factor signaling

Discovered that adenoviral E1A suppressed the radiation-induced activation of NF-κB, a transcription factor known to protect cells from cell death. This finding provides a plausible mechanism for the long-known susceptibility of cells to radiation-induced apoptosis in the presence of E1A

As an independent investigator

Identified the molecular mechanisms by which anticancer agents of indigenous origin such as curcumin, allicin and emodin induce apoptosis thus providing a plausible mechanistic basis for their chemopreventive actions

Reported novel molecular changes in human cervical cancer: constitutive activation of NF-κB and loss of expression and/or mutation of TGF-β signaling intermediates

Indian Patent entitled, "A Synergistic Anti-Tumor Composition" was filed on 7th July, 2006 (Application No. 1202/CHE/2006) Inventors: D. Karunagaran and Suby Oommen

ADDITIONAL PROFESSIONAL ACTIVITIES

Former Co-ordinator, Bio-informatics Distributed information sub-centre, Rajiv Gandhi Centre for Biotechnology

Former member of the Executive Committee, Bio-informatics Distributed information sub-centre, Tropical Botanical Garden Research Institute, Thiruvananthapuram

Member, Advisory board, Department of Biotechnology, Malankara Catholic College, Kaliakavilai, Tamil Nadu

Member, Scientific advisory board, Sugen Life Sciences, Tirupati

Member, Executive committee, Centre for Biotechnology, Anna University, Chennai

Member, Governing Council, Amala Cancer Centre, Thrissur

PhD examiner: Bharathiar University, Manipal University, Mahatma Gandhi University, Sri Chitra Tirunal Institute of Medical Sciences and Technology, Jawaharlal Nehru University, University of Madras, University of Calicut, University of Mumbai, Osmania University, Pondicherry University

MSc Examiner: CUSAT, Pondicherry University, PSG College of Arts and Science, GRD College of Science, Calicut University, Avinashilingam University, Anna University

Resource person for UGC refresher courses in Life sciences

Member, Board of Studies in Biochemistry, PSG College of Arts and Science (Autonomous), Coimbatore

Member, Board of Studies in Biotechnology, Bharathiar University, Coimbatore

Member, Board of Studies in Bioinformatics, University of Calicut

Member, Board of Studies in Zoology, University of Kerala

Member, Board of Studies in Aquatic Biology, University of Kerala

Member, Board of studies in Biochemistry, Annamalai University

Member, Management Advisory Committee, MSc Biotechnology teaching program, School of Biotechnology, Madurai Kamaraj University, Madurai

Member of Accreditation committee, NBA, AICTE, New Delhi

Member of Project Reviewing and Steering Group, Ministry of Information Technology, Govt. of India

Former Vice-president, Society of Biotechnologists (India)

Vice President, Society of Biological Chemists (India)

SPONSORED RESEARCH GRANTS

Sl. No.	Agency	Title of project	Total amount Rupees in Lakhs	Period
1.	DST, Govt. of India	Regulation of Nuclear Factor-kappa B by Epidermal Growth Factor	17.61	1999-2002
2.	STED, Govt. of Kerala	A study on the antiproliferative effects of organosulphur compounds from garlic in human cancer cell lines	4.37	2002-2004
3.	LSRB, DRDO, Govt. of India	Studies on NF-κB, IκB and HSP70 proteins in cancer cell lines	24.98	2003-2006
4.	BTIS, DBT, Govt. of India	Bio-informatics Distributed information sub-centre (**Common grant to RGCB**)	53.00	2002-2007
5.	DST, Govt. of India	A study on the transforming growth factor-β signaling intermediate, Smad3, in human cervical cancer	22.65	2005-2008
6.	DBT, Govt of India	A Study on the Activators and Targets of NF-κB in Human Cancer Cells	43.35	2006-2009
7.	DBT, Govt of India	Program support in cancer biology (shared with four other investigators)	352.60	2008-2011
8.	DBT, Govt of India	Cytomodulins in oral cancer therapy	23.1	2009-2011

CONTRACT RESEARCH GRANT

8.	Mediscient Inc., San Mateo, USA	A Study on the Apoptosis Inducing Effects of Cytomodulins (Transforming Growth Factor – β like peptides) in Human Cancer Cell Lines	US $ 12,989	2005-2006

GENBANK SUBMISSIONS

Jinesh, G. and Karunagaran, D. (2004) Identification of new transcription factors Homo sapiens zinc finger domain-related protein TSRM (TSRM) mRNA, partial cds. GenBank Accession No. AY742823

Jinesh, G. and Karunagaran, D. (2007) Homo sapiens mothers against decapentapelagic homolog 3 [Smad3] alternatively spliced and mutant mRNA at exon8, 9 in SiHa cell line. GenBank Accession No. EU016554

Jinesh, G. and Karunagaran, D. (2007) Homo sapiens mothers against decapentapelagic homolog 3 [Smad3] mRNA, splicing error mutant in SiHa cell line, exon 3 to 6. GenBank Accession No. EU016553

Jinesh, G. and Karunagaran, D. (2007) Homo sapiens mothers against decapentapelagic homolog 3 [Smad3] intron-8 to exon-9 splicing error mutant mRNA in HeLa cell line. GenBank Accession No. EU016552

Antony,M. and Karunagaran,D.(2007) Mutated TGF beta RI in ovarian cancer. GenBank Accession No. EF142854

Antony,M. and Karunagaran,D.(2007) Mutated TGF beta RI in ovarian cancer. GenBank Accession No. EF142853

CONFERENCES/SEMINARS/SYMPOSIA

International

Presented a paper at the Annual meeting of the Society of Biological Chemists Bar Ilan University, Israel (1994)

Oral presentation at Oncogene meeting Frederick, Maryland, U. S. A. (June 1995)

Attended Symposium on "Tyrosine phosphorylation and signaling" Salk Institute, La Jolla, California, U.S.A. (August 1996)

Presented a poster at the International conference on new targets of the NF-κB pathway for novel therapies in cancer and inflammation Madrid, Spain (June 12-13, 2000)

Chaired a session during International symposium on Cancer and Cell Death, NCBS, Bangalore, (January 9-13, 2002)

Chaired a session during the 22nd Annual convention of the Indian Association for Cancer Research and International symposium on recent advances in cancer causes and control Regional Cancer Centre, Thiruvananthapuram, January 10-12, 2003

Participation, Pharmacophore 2004 International symposium on Innovating Drugs: Emerging Perspectives, Dr. Reddy's Research Foundation, Hyderabad, January 16-17, 2004

Lecture on "Survival Tricks of Cancer Cells: Leads for Translational Research" at the International symposium on Translational Research: Apoptosis and Cancer, Thiruvananthapuram, December 18-21, 2005

Presented a poster entitled, "Aberrations in the expression of transforming growth factor-beta receptors and smads in human ovarian cancer" Gordon Research Conference at New London, Connecticut, USA July 16-21, 2006

International conference on Ethnopharmacology and Alternative Medicine, Amala Cancer Research Centre, Thrissur, January 20-22, 2006

Presented a poster entitled, "mir-29b negatively regulates Wnt signaling" at the Keystone Symposia: RNA Silencing: Biology, Mechanism and Application, Keystone Resort, Keystone, Colorado, USA Jan. 14-19, 2010

Visited Universitas Klinikum at Mannheim, Germany from July 19, 2010 to August 1, 2010 on a DAAD research visit program

National

Poster presentation, 56th Annual meeting of Society of Biological Chemists, Sri Venkateswara University, Tirupati, December 28-30, 1987

Oral presentation, National symposium on regulatory mechanisms in plant and microbial systems, Osmania University, Hyderabad, March 28-30 1991

1999

68th Annual meeting of Society of Biological Chemists IISc, Bangalore, 27-29 December 1999

Symposium on Transcription assembly and nucleic acid-protein interactions IISc, Bangalore, 7-9 June 1999

Symposium on Signal Transduction in Biology Cancer Research Institute, Mumbai, 4 -5 January

XXII All India Cell Biology Conference, Rajiv Gandhi Centre for Biotechnology, Trivandrum, 20-22 February

2000

19th Annual convention of Indian Association for Cancer Research, Amala Cancer Centre, Thrissur, 20-22 January

National symposium on medical, plant and industrial biotechnology, Cochin University of Science and Technology, Cochin, 1-2 December

2001

20th Annual convention of Indian Association for Cancer Research, Ahmedabad, Jan19-21

XXV All India Cell Biology Conference IISc, Bangalore, 1-3 November

2002

International Conference on Emerging Trends in Cancer Research, JNU, Delhi, 14-16 March

Refresher Course in Life Sciences, UGC Academic Staff College, University of Kerala, 17th July

National seminar on Trends in Biotechnology, Tropical Botanic Garden and Research Institute, Thiruvananthapuram, 24th July

National seminar on Recent Trends in Environmental and Biomedical Research, St. Stephen's College, Pathanapuram, 5th December

2003

UGC sponsored State level seminar on "Biomolecular Behaviour and Computing" PSG College of Arts and Science, Coimbatore, January 7

National symposium on Recent Trends in Biotechnology, Malankara Catholic College, Mariagiri, 27-28 January

CAS in Marine Biology, Annamalai University, March 30, 2003

Department of Biological Sciences, March 31, 2003. Pondicherry University

National Seminar on "Current Trends in Biotechnology and Future Prospects" Cochin University of Science and Technology, Cochin, April 4, 2003

National Seminar on Animal cell culture and its applications, Dr. G. R. Damodaran College of Science, Coimbatore, July 21, 2003

Workshop on Cervical cancer, National Centre for Biological Sciences, Bangalore, August 7-8, 2003

Recent Trends in Biosciences, Kongu Arts and Science College, Erode, September 1, 2003

National conference on "Recent Trends in Biochemistry" Sri Krishnadevaraya University, Anantapur, October 20, 2003

Current Trends in Forensic and Clinical Applications of Biotechnology, Amrita Institute of Medical Sciences, Cochin, November 1, 2003

2004

Avinashilingam Deemed University, Coimbatore, January 9

Cancer Genomics, Madurai Kamaraj University, Madurai, February 28

One-day seminar on Medical, plant and industrial biotechnology CUSAT, Cochin, 12th June

State level seminar in Biotechnology, Dept. of Biotechnology, Govt. College, Kariavattom, 19th October

National symposium on Biotechnology, Dept of Biotechnology, Bharathiar University, Coimbatore, 27th October

International Workshop on Cervical Cancer, November 8-9, NCBS, Bangalore

Society of Biological Chemists Annual general body meeting, Pantnagar, CRK Lecture award presentation, 22nd November

National symposium on chromosomes in human genome, Karpagam Arts and Science College, Coimbatore December 4

UGC refresher course in Life sciences, Dept of Marine Biology, CUSAT, Cochin, 18th December

2005

National seminar, Mar Augusthinose College, Ramapuram, January 4
National seminar on recent advances in biosciences, St. Joseph's college, Trichy, January 20
XVIth Annual BTIS coordinator's meet, BISR, Jaipur, February 3-4
24th Annual convention of Indian Association for Cancer Research, February 9-12, New Delhi
Refresher Course in Life Sciences, UGC Academic Staff College, University of Kerala, 29th March
Lecture on Molecular Biology of Cancer, Dept. of Biochemistry, University of Kerala, April 6
Lecture on "Signal Transduction Pathways" Amala Cancer Research Centre, May 25, Thrissur
Refresher Course in Environmental Sciences, UGC Academic Staff College, University of Kerala, 28th July
Brain storming session on Cancer, sponsored by DBT at NCBS, August 6-8, Bangalore
National conference on Biotechnology in Genomics Era, Arulmigu Kalasalingam College of Engineering, September 16, Krishnankoil, Tamil Nadu
Seminar on Genomics and Proteomics-Methods and Applications, MKU, September 30, Madurai
Refresher course in Bioinformatics, UGC Academic Staff College, University of Kerala, October 8

2006

Regulation of gene expression at Kristu Jyoti College of Management and Technology, Changanacherry, January 24
UGC academic staff college, University of Kerala, 30th January
National seminar on human resources development in bioinformatic, Sree Narayana College of Technology, Kollam, 21st February
UGC academic staff college, University of Kerala, 10th March
National conference and workshop in bioinformatics, 21-24 March
Lecture on Signal transduction pathways, Amala Cancer Research Centre, Thrissur, 30th May
Lecture at CCMB, Hyderabad, September 25
Lecture at Pondicherry University, October 16
Lecture at RGCB, Thiruvananthapuram, November 27
Lecture at JNU, New Delhi, SBC annual meeting, December 11
Lecture at Avinashilingam University, December 15
Lecture at SKU, Anantapur, December 17

2007

26th Annual Convention of Indian Association for Cancer Research and International Symposium on Translational Research in Cancer at Bhubaneswar, January 17-19
National Seminar on Current Trends in Bioinformatics on February 15 and gave a lecture on "An Overview of Bioinformatics" at Sri Venkateswara college of Engineering, Pennalur, Sriperumbudur
UGC-SAP sponsored national workshop cum conference on Free radicals and Antioxidants in Health, organized by the Department of Biochemistry and Biotechnology, Annamalai University, on March 4
Lecture on "Molecular Biology of Cancer" at the workshop on Modern Biology in the Era of Genomics organized by Madurai Kamaraj University on March 26
Lecture on "Aberrations in Transforming Growth Factor Beta Signaling in Human Cancers" at the 76th Annual meeting of Society of Biological Chemists (India) on 27th November at SV University, Tirupati, India.
Lecture on " Apoptosis induced by phytochemicals: curcumin and emodin in the symposium on Pharmaceuticals and lead compounds from bacteria, fungi and plants at Vivekananda college, Chennai, on 6th December

2008

Lecture on molecular biology of cancer at Stella Maris College, Chennai, on 8th January (International conference on developments in Biotechnology)
Lecture on the "Role of microRNAs in cancer" for the International Symposium (Bioinformatica Indica '08) on 19th January 2008, at The Centre for Bioinformatics, Karyavattom Campus, University of Kerala, Trivandrum
Lecture on curcumin-induced apoptosis at the Indo-Canada Workshop organized by DBT and held on 5th February 2008 at Hotel Taj Mahal, Mansingh Road, New Delhi
Refresher Course in Environmental Sciences, UGC Academic Staff College, University of Kerala, 24th June
Lecture at Sastra University, Thanjavur on August 1
Lecture at Dr. MGR-Janaki College of Arts and Science, Chennai on September 9
Lecture at Kumararani Meena Muthiah College of Arts and Science, Chennai on September 11
Lecture at KIIT, Bhubaneswar, on October 24

2009

Lecture at JNU, Delhi on February 14

Lecture at IIT Bombay, Mumbai on February 28

PUBLICATIONS

2010

1. Vidya Priyadarsini, R., Senthil Murugan, R., Maitreyi, S., Ramalingam, K., Karunagaran, D. and Nagini, S. (2010) The flavonoid quercetin induces cell cycle arrest and mitochondria-mediated apoptosis in human cervical cancer (HeLa) cells through p53 induction and NF-κB inhibition. *Eur J Pharmacol.* **649,** 84-91.
2. Murugan, R. S., Priyadarsini, R. V., Ramalingam, K., Hara, Y., Karunagaran, D. and Nagini, S. (2010) Intrinsic apoptosis and NF-κB signaling are potential molecular targets for chemoprevention by black tea polyphenols in HepG2 cells in vitro and in a rat hepatocarcinogenesis model in vivo. *Food Chem Toxicol.* **48,** 3281-3287.
3. Sumith Retnamma Panicker, Prethish Sreenivas, Mani Sankar Babu, **Devarajan Karunagaran** and Chandrasekharan Cheranellore Kartha (2010) Quercetin attenuates Monocyte Chemoattractant Protein-1 gene expression in glucose primed aortic endothelial cells through NF-κB and AP-1. *Pharmacol Res* **62,** 328-336.
4. Vidya Priyadarsini, R., Senthil Murugan, R., Sripriya, P., **Karunagaran, D**. and Nagini, S. (2010) The neem limonoids azadirachtin and nimbolide induce cell cycle arrest and mitochondria-mediated apoptosis in human cervical cancer (HeLa) cells. *Free Radic Res.* **44,** 624-634.
5. Marie Lue Antony, Rema Nair , Paul Sebastian and **Devarajan Karunagaran** (2010) Changes in expression, and/or mutations in TGF-β receptors (TGF-β RI and TGF-β RII) and Smad 4 in human ovarian tumors *J Cancer Res Clin Oncol* **136,** 351-361

2009

6. Sivakumar, KC, Thomas B, and **Karunagaran D** (2009) Three dimensional structure of the closed conformation (active) of human merlin reveals masking of actin binding site in the FERM domain *Int. J. Bioinformatics Research and Applications* **5,** 516-524
7. Paul BT, Babu MS, Santhoshkumar TR, **Karunagaran D**, Selvam GS, Brown K, Woo T, Sharma S, Naicker S, Murugesan R. (2009) Biophysical evaluation of two red-shifted hypocrellin B derivatives as novel PDT agents *J Photochem Photobiol B.* **94,** 38-44

2008

8. **Karunagaran D,** Sripriya P, and Prabhakar BN. (2008) MicroRNAs: Novel and potential candidates for cancer therapy, *ICFAI Journal of Biotechnology* **2,** 38-51

2007

9. **Karunagaran D**, Joseph J, Kumar TR. (2007) Cell growth regulation, *Adv. Exp. Med. Biol.,* **595,** 245-268
10. Saja K, Babu MS, **Karunagaran D**, and Sudhakaran PR (2007) Anti-inflammatory effect of curcumin involves downregulation of MMP-9 in blood mononuclear cells. Int. Immunopharmacol. **7,** 1659-1667.

2006

11. Shlomit Erlich, Pazit Tal-Or, Roy Blum, Yoel Kloog, Devarajan Karunagaran and Ronit Pinkas-Kramarski (2006) Ras Inhibition Results in Growth Arrest and Death of Androgen-Dependent and Androgen-Independent Prostate Cancer Cells. *Biochem pharmacol.*, **72,** 427-436
12. John Mohan, Alankaram Arul Gandhi, Balan Chandrika Bhavya, Ramachandran Rashmi, **Devarajan Karunagaran**, Ramachandran Indu, and Thankayyan Retnabhai Santhoshkumar (2006) Caspase-2 triggers Bax-Bak dependent and independent cell death in colon cancer cells treated with resveratrol. J. Biol. Chem., **281,** 17599-17611
13. Kumaraguruparan R, **Karunagaran D,** Balachandran C, Manohar BM, Nagini S (2006). Of humans and canines: A comparative evaluation of heat shock and apoptosis-associated proteins in mammary tumors. *Clin Chim Acta*. **365,** 168-176

2005

14. Manickam Venkatraman, Ruby John Anto, Asha Nair, Merina Varghese and **Devarajan Karunagaran** (2005) Biological and chemical inhibitors of NF-κB sensitize SiHa cells to cisplatin-induced apoptosis. *Mol. Carcinogenesis* **44,** 51-59

15. **D. Karunagaran**, R. Rashmi and T. R. Santhosh Kumar (2005) Induction of Apoptosis by Curcumin and Its Implications for Cancer Therapy. *Curr. Cancer Drug Targets* **5,** 117-129
16. Ramachandran Rashmi, Santhosh Kumar and **Devarajan Karunagaran** (2005) Human colon cancer cells lacking Bax resist curcumin-induced apoptosis and Bax requirement is dispensable with ectopic expression of Smac or downregulation of Bcl-XL *Carcinogenesis* **26,** 713-723
17. Smitha, V. B., Vinesh Kumar, T. P., Deepti, A., Nair, A., **Karunagaran, D**., and Anto, R. J. (2005). Sensitization of taxol-induced apoptosis by curcumin involves down-regulation of nuclear factor-kappa B and the serine/threonine kinase Akt and is independent of tubulin polymerization. *J. Biol. Chem.,* **280,** 6301-6308

2004

18. Ramachandran Rashmi, Santhosh Kumar and **Devarajan Karunagaran** (2004) Ectopic expression of Bcl-XL or Ku70 protects human colon cancer cells (SW480) against curcumin-induced apoptosis while their downregulation potentiates it. *Carcinogenesis* **25:**1867-1877
19. Tessy T Maliekal, Ruby John Anto and **Devarajan Karunagaran** (2004) Differential Activation of Smads in HeLa and SiHa Cells that Differ in their Response to Transforming Growth Factor-β. *J. Biol. Chem.,* **279:** 36287-36292
20. Suby Oommen, Ruby John Anto, Gopal Srinivas and **Devarajan Karunagaran** (2004) Allicin (from garlic) induces caspase-mediated apoptosis in cancer cells. *European Journal of Pharmacology* **485,** 97-103
21. Ramachandran Rashmi, Santhosh Kumar and **Devarajan Karunagaran** (2004) Ectopic Expression of Hsp70 Confers Resistance, and Silencing Its Expression Sensitizes Human Colon Cancer Cells to Curcumin-induced Apoptosis. *Carcinogenesis* **25:** 179-187

2003

22. Tessy T Maliekal, Marie-Lue Antony, Asha Nair, Ramasamy Paulmurugan and **Devarajan Karunagaran** (2003) Loss of expression, and mutations of *Smad 2* and *Smad 4* in human cervical cancer. *Oncogene* **22,** 4889-4897
23. Gopal Srinivas, Ruby John Anto, Priya Srinivas, Subramanian Vidhyalakshmi, Vijayamma Priya Senan and **Devarajan Karunagaran** (2003) Emodin induces apoptosis of human cervical cancer cells through poly (ADP-ribose) polymerase cleavage and activation of caspase 9. *Eur. J. Pharmacol.* **473,** 117-125
24. Ruby John Anto, Manickam Venkatraman, and **Devarajan Karunagaran** (2003) Inhibition of NF-κB sensitizes A431 Cells to EGF-induced apoptosis whereas its activation by Ectopic expression of RelA confers resistance *J. Biol. Chem.* **278,** 25490-25498
25. R. Rashmi, T. R. Santhosh Kumar, **D. Karunagaran** (2003) Human colon cancer cells differ in their sensitivity to curcumin-induced apoptosis and heat shock protects them by inhibiting the release of apoptosis-inducing factor and caspases *FEBS Letters* **538,** 19-24.
26. Asha Nair, Manickam Venkatraman, Tessy T. Maliekal, Balaraman Nair, and **Devarajan Karunagaran** (2003) Nuclear Factor-κB is Constitutively Activated in High grade Squamous Intraepithelial Lesions and Squamous Cell Carcinomas of the Human Uterine Cervix. *Oncogene* **22,** 50-58.
27. Asha Nair, S., **Karunagaran, D.**, and Sudhakaran, P. R. (2003) Changes in matrix metalloproteinases and their endogenous inhibitors during tumor progression in the uterine cervix. *J Cancer Res Clin Oncol* **129,** 123-131

2002

28. Rabi T, **Karunagaran D,** Krishnan Nair M, Bhattathiri VN. (2002) Cytotoxic activity of amooranin and its derivatives. *Phytother. Res.* **1,** S84-86

2000

29. Anto, R. J., Maliekal, T. T., and **Karunagaran D.** (2000) L-929 cells harboring ectopically expressed RelA resist curcumin-induced apoptosis *J. Biol.Chem.* **275,** 15601-15604

1997

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