

A. RAVI KIRAN M. Pharm, Ph. D

Associate Professor

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ACADEMIC QUALIFICATIONS

Qualification	Majors	Year	University	%
Ph.D	Pharmaceutical Sciences	2015	Osmania University	-
M. Pharmacy	Pharmaceutical Biotechnology	2004	The Tamilnadu Dr. MGR Medical University	69.4%
B. Pharmacy	Pharmaceutical Sciences	1999	Gulbarga University	60%

TEACHING EXPERIENCE: 10 years 5 months experience

- Working as Associate Professor at G. Pulla Reddy College of Pharmacy from Aug 2015.
- Working as Sr. Asst. Prof at G. Pulla Reddy College of Pharmacy from Jan 2009 to July 2015.
- Worked as Asst Prof at G. Pulla Reddy College of Pharmacy from Jan-2005 to Dec-2008.

RESEARCH EXPERIENCE

- Biologist with 8 years of experience in the identification of small molecules from natural resources against Obesity, Cancer, and Diabetes.
- Guided 6 M. Pharmacy projects.

TECHNICAL EXPERTISE

- **Cell culture:** Maintenance of primary & established cell lines (macrophage, Fibroblasts, breast, prostate, colon, leukemia, neuroblastoma, Liver, Ovarian and Embryonic kidney cells).
- **Drug screening assays:** High Throughput Screening, MIC determination, Fluorescence assay, Cell proliferation assays, Synergism studies, Apoptotic detection assays, Flowcytometry, HPLC.

- **Animal studies:** Handling and performing various pharmacological screening methods in rats and mouse. Worked with various cancer and obesity animal models.
- **Molecular biology:** Blotting techniques, Nucleic acid isolation, RT-PCR, Expression and purification of recombinant proteins, 2D gel electrophoresis, PCR, Purification by using AKTA Explorer.
- **Immunology:** ELISA and Immunofluorescence.

RESEARCH INTEREST

- My area of research involves identification of potential NCEs and scientific validation in studying the mechanistic events altered by newly identified NCEs from natural resources for human disease. Also I am interested in target based identification of small molecules from natural sources against obesity and cancer.

Doctor of Philosophy:

Mentor: Dr. B. Madhava Reddy

Topic: Evaluation of Anti obesity and Anti cancer activity of *Tecomella undulata*

Description: Obesity is a global health problem and a risk factor for the development of metabolic disorders like type 2 diabetes, systemic hypertension, cardiovascular disease, dyslipidemia, cancer and atherosclerosis. Present study was aimed to investigate the in vitro and in vivo antiobesity and anticancer activity of *Tecomella undulata* bark. Chloroform, ethyl acetate and methanol extracts of *Tecomella undulata* bark were obtained by soxhlet extraction method. Preliminary studies on 3T3-L1 fibroblasts revealed the better anti adipogenesis activity of ethyl acetate extract compared to chloroform and methanol extracts. Fractionation of ethyl acetate extract by column chromatography using mixture of dichloromethane::methanol in increasing polarity (99:1, 98:2, 97:3, 95:5, 90:10, 85:15 and 80:20) resulted in seven fractions (F1-F7) and all the fractions were investigated for adipogenesis inhibition assay using 3T3-L1 preadipocytes and fully matured adipocytes. Further F1 mediated effects were characterized by determining mRNA and protein levels of SIRT1 one of the key targets for the treatment of obesity, using semi-quantitative RT-PCR (sqRT-PCR) and western blot analysis which resulted in up regulation of SIRT1 and down regulation of its target proteins PPAR γ , C/EBP α at transcript and protein levels that implies F1 might inhibit adipocyte differentiation by regulating expression of SIRT1. *In vivo* studies of F1 in HFD induced obese mice showed significant reduction in body weight gain and improvement in lipid profile and glucose levels suggesting the beneficial effects

of F1 to ameliorate diseases and disorders associated with adipose physiology *i.e* obesity and related metabolic disorders.

Since obesity is linked to development of various cancers, the anticancer effects of *Tecomella undulata* bark extract has been studied to target obesity and related cancers. Preliminary studies on K562, COLO-205, MDA-MB231, HEPG2, PC3 and LNCaP cell lines revealed that chloroform extract has antiproliferative activity towards K562 and ethyl acetate extract on LNCaP cell lines with an IC₅₀ of 30µg/ml and 40µg/ml respectively compared to standard curcumin. Mechanistic studies on K562 cells demonstrated that chloroform extract induced apoptosis by increasing sub G0/G1 phase and arrest of S phase of cell cycle, increased Fas-FADD expression, caspase-8, 3/7 activation and DNA fragmentation. Whereas F1, active fraction of ethyl acetate extract induced apoptosis in androgen dependent LNCaP prostate cancer cells by inhibiting SIRT1 followed by activating p53, caspases, release of Cytochrome c, increased C/EBPα which in turn decreasing the levels of Prostate Specific Antigen (PSA). Reduction in testosterone induced benign prostatic hyperplasia was observed with F1 in rats.

In summary, our findings signified the beneficial effects of *Tecomella undulata* bark in pharmacologic interventions related to obesity and obesity associated disorders.

LIST OF PROJECTS GUIDED

1. Protective effect of *Macrotyloma uniflorum* on urethane induced lung cancer in Balb/c mice. Mr. Syed Baseeruddin Alvi. 2014.
2. Protective effect of Ranolazine on urethane induced lung cancer in Balb/c mice. Mr. Mirza Noor ullah Baig. 2014.
3. Pharmacological evaluation of ethanolic extract of whole plant of Cassia absus on 1, 2 - Dimethyl Hydrazine induced colon cancer in mice. Miss. Athiya Sulthana. 2013.
4. Effect of Ranolazine on 1, 2 - Dimethyl Hydrazine induced colon cancer in mice. P. Rama Devi. 2013.
5. Combined effect of Curcumin and Naringin in Progesterone induced obesity. Miss. Arshia Firdouse. 2012.
6. Synergistic activity of Piperine and Naringin in Progesterone induced obesity in female Albino mice. Mr. Mohammad Latif Nazari. 2012.

LIST OF PROJECTS APPROVED

Received one research grant of 25,000 lakhs entitled “Discovery of non-carbohydrate selective inhibitors of the galectin-1 for the treatment of cancer” sponsored by DBT, India. – **Co. Investigator.**

LIST OF PROJECTS SUBMITTED

Submitted One Project “Development of novel inhibitors of essential Bacterial Cell Division Protein (FtsZ) as anti staphylococcal agents to DBT, India with reference number BT/PR14185/MED/29/968/2015. **Principal Investigator.**

FELLOWSHIPS AND AWARDS

1. First Prize for oral presentation in Innovations in Pharmaceutical Research held at G. Pulla Reddy College of Pharmacy, Hyderabad, 27th Dec 2013.
2. First prize for poster presentation in PHARMAX-2K10 held at Mather Teresa College of Pharmacy, Hyderabad.
3. First prize for poster presentation in APTI-2010 National level conference held at Hyderabad.

PROFESSIONAL ACTIVITIES

- Examiner for Pharmaceutical Microbiology, Pharmaceutical Biotechnology, Biology, and Biochemistry at Osmania University, Kakatiya University, Palemuru University.
- Reviewer for Journal of Food Biochemistry, African Journal of Microbiology Research, Journal of Nutritional Disorders & Therapy, Life Sciences (OMICS), Journal of King Saud University and Pharmaceutical Biology.
- Life Member of A.P.T.I.
- Instrumental in organizing conferences in G. Pulla Reddy College of Pharmacy.

PAPERS PRESENTED

1. Antiproliferative activity and molecular mechanism of *Pupalia lappacea* on chronic myeloid leukemia (K562) cells- Presented at 12th International congress of Ethnopharmacology, Jadhavapur University, February 17-19, 2012 at Kolkata.
2. Anti-cancer activity of methanolic extract of *Cassia absus* seeds in K562 cells, National Conference on Natural Product Research: for Health and Biopharma Industry, Kumara guru College of Technology, Coimbatore, 25th Mar 2011.

3. Anti-proliferative activity of *Tecomella undulata* Bark extract, APTI CONVENTION-2010, Hyderabad, 2nd Oct 2010.
4. Protective effect of Ranolazine on 1,2 dimethyl hydrazine induced colon cancer in Swiss albino mice. 66th Indian Pharmaceutical Congress held at Hyderabad during 23-25 January, 2015. Mr.Syed Baseeruddin Alvi, Ravi Alvala.
5. Targeting multiple proteins involved in cancer by plant polyphenols: In-silico molecular docking studies. 66th Indian Pharmaceutical Congress held at Hyderabad during 23-25 January, 2015. Rmaya Nuti, Ravi Alvala.
6. Development of pantothenate synthetase inhibitors for *Mycobacterium tuberculosis* infection: design and enzyme inhibition studies. 2nd national symposium on Current Trends in Pharmaceutical Sciences, 17th Nov, 2012 at BITS-Pilani, Hyderabad Campus, Hyderabad.
7. In-silico design of novel sirt1 inhibitors for targeting benign prostatic hyperplasia. Conference on “Recent Advances in Computational Drug Design (RACDD)” held at IISc, Bangalore on 16-17th Sep 2013. Mallika Alvala, Ravi Alvala.
8. Antiobesity effect of novel SIRT1 activator: In-vitro and In-Vivo studies. 2nd national symposium on Current Trends in Pharmaceutical Sciences, 17th Nov, 2012 at BITS-Pilani, Hyderabad Campus, Hyderabad.
9. Development of homology model and docking studies of Mycobacterium tuberculosis sirtuin protein (Rv1151c), MedChem 2011 Congress, IICT, Hyderabad, 26th Feb 2011.
10. *In vitro* anticancer activity of Abutilon indicum leaves on U-87 MG, a brain tumor cell line. XXXXIV Annual Conference of Indian Pharmacological Society, IPS, INDIA. 19th Dec 2011.

CONFERENCES/ TRAINING/WORK SHOPS ATTENDED:

1. Attended Workshop on Role of Pharma in Health Care conducted by Administrative Staff College of India, Hyderabad on 9-4-2015.
2. One Day Seminar on Innovations in Pharmaceutical Research on 27th Dec 2013 at G. Pulla Reddy College of Pharmacy, Hyderabad.
3. Participated in Faculty Development Programme conducted by Sivani Institute of Management on 19-10-2012.

4. Attended 12th International Congress of Ethnopharmacology held at Science City, Kolkata from 17-19, 2012.
5. Participated in Symposium on Current Trends in Pharmaceutical Sciences organized by Department of Pharmacy on 12th Nov 2011 at BITS-Pilani Hyderabad Campus.
6. Attended National Conference on Natural Product Research for Health Care and Bio-Pharma Industry organized by Kumarguru College of Technology, Coimbatore held on 25th and 26th Mar 2011.
7. Attended 15th National Convention of APTI at Shilpakala Vedika, Hyderabad on 2-3rd Nov 2010.
8. Attended National Seminar on Recent Advances in Pharmaceutical Research at G. Pulla Reddy College of Pharmacy on 9th and 10th Oct 2009.
9. Quality Improvement Programme on Advanced Techniques in Experimental Pharmacology organized by JSS College of Pharmacy Ootacamund, Tamilnadu from Mar 30 – April 6 2007.
10. One day seminar on Pharmaceutical Education- Challenges and opportunities organized by APTI, A.P. State branch at G. Pulla Reddy College of Pharmacy on 17th July 2006.
11. Attended PHARMAX-2K10, held at Mather Teresa College of Pharmacy, Hyderabad.
12. Attended one day workshop on TEACHING SKILLS organized by APTI, A.P. State at Bharat Institute of Pharmacy on 9-9-2005.
13. Under gone Training in production and quality control of Rabies Vaccine and DTP group at Pasteur Institute, Coonoor, Nilgiris, from 5-7-2004 to 9-7-2004.
14. Attended 55th IPC at Chennai on Dec 19, 20, 21th 2003.
15. State level seminar on Emerging Trends in Microbiology: Organized by Sri Rama Krishna College of Arts and Sciences, Coimbatore on Mar 6th 2003.
16. Second PSG Tech Symposium in Biosciences: Organized by PSG college of Technology, Coimbatore, on Feb 14-15, 2003.

PUBLICATIONS

1. **Alvala Ravi**, Mallika Alvala, Ramya Nuti, Malasala Satyaveni, Jageshwari Sahu, Srinivas Bandaru, Overview Of Mycobacterium Tuberculosis Chorismate Mutase: A Potential Target, Curr Trends Pharm Sci 2 ,2-3(2014)55-63.

2. Reddy Raghunath Babu, K. Naresh, **Ravi Alvala**, B. Madhava Reddy, V. Harinadha Babu. (2014): Synthesis of novel isoniazid incorporated styryl quinazolinones as anti tubercular agents against INH sensitive and MDR M. tuberculosis strains. Medicinal Chemistry Research. **Impact Factor: 1.612.**
3. **Ravi Alvala**, Mallika Alvala, Venkatesh Sama, Sriram Dharmarajan, Jeankumar Variam Ullas, Madhava Reddy B (2013). Scientific evidence for traditional claim of anti-obesity activity of Tecomella undulata bark: Journal of Ethnopharmacology 148: 441-448. **Impact Factor: 3.014.**
4. Sama V, Rajesh B, Krishnaiah A, **Ravikiran A**, Reddy BM, Mullangi R (2013). Evaluation of antioxidant potential of *Caralluma attenuata*: Indian Drugs 50: 26-33.
5. Achutha, M. Deepthi, B. Madhava Reddy, **A. Ravi Kiran**, V. Harinadha Babu (2012). Microwave assisted synthesis of some Quinoxaline incorporated Schiff bases and their biological evaluation: Invention Rapid: Med Chem
6. **Alvala Ravi**, A.Mallika, Venkatesh Sama, Arunasree.M.Kalle, Vamshi. K. Irlapati, B. Madhava Reddy (2012). Anticancer activity of *Pupalia lappacea* on chronic myeloid leukemia K562 cells: DARU journal of Pharmaceutical sciences- Biomed central 5: 20-86. **Impact Factor: 0.63**
7. Lingappa Mallesha, Kikkeri N. Mohana, Bantal Veeresh, **Ravi Alvala**, and Alvala Mallika., Synthesis and In Vitro Antiproliferative Activity of 2-Methyl-3-(2-piperazin-1-yl-ethyl)-pyrido[1,2-a]pyrimidin-4-one Derivatives Against Human Cancer Cell Lines, Arch Pharm Res Vol 35, No 1, 51-57, 2012 Springer. **Impact factor: 1.588.**
8. Mallika Alvala, Shubhmita Bhatnagar, **Alvala Ravi**, Variam Ullas Jeankumar, Thimmappa H Manjashetty, Perumal Yogeewari, Dharmarajan Sriram, Novel acridinedione derivatives: Design, synthesis, SIRT1 enzyme and tumor cell growth inhibition studies. Bioorganic & Medicinal Chemistry Letters 22 (2012) 3256–3260. **Impact factor: 2.661.**
9. Sama Venkatesh, Bhasker Babu N., Latha K., **Ravi Alvala**, Madhava Reddy B, Mullangi R (2012): Evaluation of *Trapa bispinosa* starch as an alternative tablet excipient to maize starch: assessment by preformulation and formulation studies. Indian Drugs 49:27:32.
10. Srikanth AV, **Ravikiran. A**, Ravi kumar P, Lakshmi Narsu M, Madhava Reddy B (2011): Cytotoxic activity of *Gymnema sylvestre*. Pharma Science Monitor

11. **Alvala Ravi**, A. Mallika, Venkatesh Sama, Sajeli Begum, Rukaiyya Khan, Madhava Reddy (2011): Antiproliferative activity and standardization of *Tecomella undulata* bark extract on K562 Cells. Journal of Ethnopharmacology 137: 1353-1359. **Impact Factor: 3.014.**
12. Sama V, Rajkumari P, **Alvala R**, Reddy BM, Ramesh M (2010): Antinociceptive effect of *Caralluma attenuate* in mice: A possible mechanism. Indian Drugs 47: 23-27.
13. Sama Venkatesh, Nabeela, **Ravi Alvala**, Madhava reddy B, Mullangi Ramesh (2010): Antidiabetic potential of *Strobilanthes meeboldii* in alloxan-induced diabetic rats. Asian Journal of Pharmacodynamics and Pharmacokinetics 10 (1):65-69.

REFERENCES:

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