

# Dr. BALARAM PATRO, CEO

GRK Research Laboratories Pvt. Ltd. 180/A, IDA Mallapur, Mallapur, Hyderabad-500 076, India.

Residence: Villa 131, Indu Aranya, GSI Post, Bandlaguda, (Nagole Crossroads), Hyderabad -500 068,  
India Contact Number: 09849401944, 07416793683 E mail: b\_patro30@hotmail.com

---

## OVERVIEW:

- **Accountability & Effectiveness: Lead two CROs which are within top 3 Indian CRO organisations.**
  - Joined Chembiotek as founding member and worked as a Group leader and PRS-supported the company with revenue and FTEs and development of new clients to support the company to grow a team size of 400.
  - Joined GVK Bio as a Director and developed multiple client relationships with big Pharma and Agro companies to grow the company 10-fold in revenue, no of employees etc.
    - SBU Head for chemistry with all support functions including BD, HR, Admin, SCM and Finance.
    - Orchestrated a growth to a team of >1000 with turnover of 40million USD with 20-25% profit and 45% EBIDTA.
  - GRK Labs we have 3-4 crore revenue with 20-25 head counts. We have around 15 foreign clients & 15 domestic clients in speciality, vitamins, nutrients and speciality chemicals segment.
  
- **Business Development Activities**
  - Travelled to expand and fortify business with clients in US, Europe, and South Asia.
  - Focused on delivery to compliment the growth from existing clients (55% of growth came from existing clients).
  - Represented the company and addressed at conferences and forums related to Pharma outsourcing, scientific skills, technology development and research.
  - Worked with Pharmaceutical, Agro, Veterinary and Material science companies from foreign countries.
  - Worked with clients from fine chemical and speciality chemicals including nutrition, vitamins, and natural products.
  - Worked with discovery, development and ADME, tox teams to deliver client projects.
  
- **Orientation in strategy, operations & finance**
  - Designed Growth, Company, Business and Procurement strategy plans.
  - Project management
    - Emphasis on Delivery, TAT, Quality.
    - Inculcated systemic metrics management.
  - Customer feedback and pro-active improvement plans.
  - Accountability of managing SBU, Profit, EBIDTA and capex planning.
  
- **Leveraging Human Capital**

- Hiring, Training and Retention plans.
  - Higher education policy, personal growth plans during appraisal.
  - Town halls and Monthly business review meetings.
  - Linking metrics to productivity.
- **Mission critical results**
- Employment creation - around 5000 jobs created
  - Revenue Generation - around 1000 crore revenue generated.
  - Innovation - Several preclinical compounds and POCs developed.
  - Efficiently started either start-ups or scaled up.
- Over 21 Years of work experience with more than 100 clients across the world (Europe, US, and APAC Region).
- **Leading expertise in the following:**
- Medicinal Chemistry: De novo Design and synthesis of novel compounds, identification of hits and leads, Lead optimisation.
  - Scale up Chemistry: Route Scouting, Novel Process development, Stability studies, Impurity profiling, Preselection compounds, Seamless tech transfer from mg to Kg and higher scales.
  - Development API building blocks, KSMs, Intermediates, we have developed couple API process, supply of intermediates, KSM also reagents from GRK Labs.
  - Analytical Chemistry: Covering both discovery and development analytical aspects.
  - Areas related to Material Science
- **Academic Awards:**
- Awarded Alexander von Humboldt Fellowship by the Alexander von Humboldt Foundation, Germany.
  - Awarded different scholarships throughout studies – IFCPAR: India and France, EPSRC: UK, etc.
- 

## **EDUCATION:**

- Ph.D. from Northeastern Hill University, India in 1994

- M.Phil. on Heterocyclic Chemistry on "Some Heterocyclic Compounds of Medicinal Interest" in 1987
  - M.Sc. in Chemistry, Berhampur University in 1985
- 

#### EXPERIENCE DETAILS:

- Since Aug 2014 - Present: **Chief Executive Officer, GRK Research Laboratories Pvt. Limited, Hyderabad.**
- Since Aug 2013 - Present: **MD, GRK Finechem Pvt. Limited**
- Since Feb 2014 - May 2014: **Chief Executive Officer, Chemgen Pharma International, Kolkata.**
- Since Sept 2013 - January 2014: **Professor and Head- Drug Discovery, KIIT University, Bhubaneswar, and Independent Scientific Professional.**
- Since 1<sup>st</sup> Feb 2013 - 1<sup>st</sup> July 2013: **Senior Vice president at GVK Bioscience Private Limited, Hyderabad**
- Since May 2005 - Jan 31, 2013: **Senior Vice president and Head Chemistry Services at GVK Bioscience Private Limited, Hyderabad**
  - Worked with more than 90 international clients in the field of Drug Discovery research and large-scale synthesis.
  - Increased the Team size from 100 People to 900 People.
  - Led all chemistry services including contract research, discovery, analytical department etc.
  - Helped the company develop new businesses, visited many countries to search, manage and discuss projects.
- March 2004 to April 2005: **Vice President at Chemgen Pharma Research International Private Limited.**
- Nov 2000 to Feb 2004: **Principal Research Scientist at Chembiotek Research International**
- April 1998 to Sep 2000: **Research Assistant at University of Strathclyde, Glasgow UK.**
- June 1996 to March 1998: **Alexander von Humboldt Fellow, Universität Konstanz, Germany**
- June 1995 to May 1996: **Post-Doctoral Fellow, University of Paris V, France**
- Feb 1994 to April 1995: **Research Associate, North-Eastern Hill University, India**

---

## COMPETENCIES OVERVIEW: RESEARCH:

- Worked in different projects i.e., Multistep target synthesis (aspidosperimidine class of alkaloids and C-disaccharides), Synthetic studies and Reagent development (Catalyst and polymer), Synthesis of biologically active heterocyclic compounds, Solid and liquid phase parallel chemistry. Radical chemistry, Electron transfer reactions.
- Worked in the SAR building of scaffolds around obesity and bone disorders (osteoporosis), Anti-cancer compounds- topoisomerase I, anti-mitotic and anti-microtubule agents, P53 modulator and DNA intercalator, Tyrosine kinase inhibitors. Alpha-glucosidase, antimicrobial etc.
- Active participation in Pharma and Agro discovery projects and integrated projects related different therapeutic areas and targets. Developed during this period several NCEs. We have developed several Pharma and agro KSM, intermediates and APIs.
- Worked for Major Pharmaceutical clients for making scaffolds, important drug intermediates.
- Worked for few major agrochemical companies in their research programs.
- Worked as the chemistry partner for different organisations except pharmaceutical and agro chemical i.e., electronics, fragrances, diagnostics, fine chemicals, building block etc. Regularly monitored project progress and suggesting novel methods, cost effective, environmental benign and designing new routes.

## BUSINESS & OPERATIONS:

- Involved in the general management of the laboratory and maintenance of instruments.
- Created new processes and brought new project management tools to monitor a group of 900 employees in my business unit.
- Responsible for the revenue as well as Capex planning and strategic growth.
- Business process mapping, Key Performance indicator creation: linked to performance bonus and appraisals.
- Goal setting, Defining KRAs and measuring accomplishment monthly.

- Expertise in different scales of synthesis. Provided guidance on projects.
- Supervision of research co-workers and project students. 6 PhD student research on-going.
- Published internationally.

#### **ANALYTICAL AND COMPUTER SKILLS:**

- Operation of Bruker NMR spectrometers for 1-D and 2-D techniques, FT-IR spectroscopy, chromatographic techniques (HPLC).
- Extensive experience in the use of 'online', searchable databases (BIDS, Reaxys, CAS, ISIS, Sci finder Patents and Beilstein).
- Use of Windows, Macintosh, and Unix Operating systems, particularly for word-processing and drawing packages.

#### **PRESENTATION/ DATA MANAGEMENT/ COMMUNICATION SKILLS:**

- Produced reports and helped in the submissions grant proposals.
- Helped to develop business and assisted in library and data management.
- Regularly presented my work (scientific and non-scientific) to a variety of audiences.
- English, Oriya, Hindi, Sanskrit, German (preliminary knowledge).

---

PhD done under my supervision:

4 PhD students submitted & awarded.

#### **PUBLICATIONS:**

1. Regioselective Synthesis of 3(or 5)-styryl-1(4-Aryl-1,3butadienyl)-/(6-Aryl-1,3,5-hexatrienyl)-5 (or 3) (methylthio) isoxazoles and Pyrazoles via Oxoketene Dithioacetals.  
M. L. Purkaystha, **Balaram Patro**, H. Ila and H. Junjappa J. Heterocyclic Chemistry, 28, 1341 (1991).
2. Acid -Induced Ring Opening of  $\alpha$ - [Bis (methylthio)methylene] alkyl Cyclopropyl Ketones: A Novel Route to Substituted Cyclopentanones through Carbocationic Cyclizations  
**Balaram Patro**, Biswajit Deb, H. Ila and H. Junjappa J. Org. Chemistry, 57, 2257 (1992).
3. A Highly Stereoselective Synthesis of Substituted Butadienes and Conjugated Polyenes.  
**Balaram Patro**, H. Ila and H. Junjappa Tetrahedron Letters, 33, 809 (1992).

4. Tandem Carboctionic cyclization of Bis (methylthio) methylene Aryl Cyclopropyl Ketones: A Promising Sequence for Assembling Functionalized Cyclopent[a]indene Framework.  
P. K. Patra, **Balaram Patro**, H. Ila and H. Junjappa Tetrahedron Letters, 34, 3951, (1993).
5. Rearrangement Studies on 3,3-Bis(methylthio)-1-(Cyclopropyl) Propen-1-ols: Synthesis of Functionalized Cyclopentene and Polyene Derivatives.  
**Balaram Patro**, Biswajit Deb, H. Ila and H. Junjappa Tetrahedron, 49, 255 (1994).
6. Facile One Pot Thermal Dehydration and Dethioacetalization of  $\beta$ -Hydroxy-dithioacetals with Dimethyl Sulphoxide: Synthesis of  $\alpha$ ,  $\beta$ -Unsaturated Aldehydes.  
Ch. Srinivasa Rao, M. Chandrasekharam, **Balaram Patro**, H. Ila and H. Junjappa Tetrahedron, 50, 5783 (1994).
7. Review on 'Heteroaromatic Annulations for the Synthesis of Bridge-head Nitrogen Compounds via  $\alpha$ -Oxoketene Dithioacetals'.  
H. Junjappa, H. Ila, **Balaram Patro** and Ch. Srinivasa Rao Journal of Indian Chemical Society, 71, 501, (1994).
8. Synthesis of D-Ring Functionalized and D-Benzo/Heteroannulated Estrone derivatives via  $\alpha$ -Oxoketene Dithioacetals  
Akhilesh K. Gupta, K. Mallick Yadav, **Balaram Patro**, H. Ila and H. Junjappa Synthesis, 841 (1995).
9. Chemoselective Conjugate 1,4-Reduction of  $\alpha$ -Oxoketene Dithioacetals with Zinc in Acetic acid: Synthesis of  $\beta$ -Oxodithioacetals.  
Ch. Srinivasa Rao, **Balaram Patro**, H. Ila and H. Junjappa Indian Journal of Chemistry, Section B, 35B (1), 57, 1995.
10. Synthesis of Triaryl-s-triazines from 2,4,5-Triarylimidazole in a Ring Expansion Reaction.  
Chandra Sekhar Panda, **Balaram Patro** and Arun Kumar Padhy Journal of Indian Chemical Society, 73, 283, (1996).
11. Stepwise Controlled Reduction Studies on  $\alpha$ -Oxoketene Dithioacetals with Zn/ZnCl<sub>2</sub>-TMEDA in Ethanol.  
K. Mallick Yadav, Joghee R. Suresh, **Balaram Patro**, H. Ila and H. Junjappa Tetrahedron, 52, 4679, (1996).
12. Carbon-bridged Trehalose Synthesis of Bis [( $\beta$ ,  $\beta$ )-galactopyranosyl] methanol  
**Balaram Patro** and Richard R. Schmidt Synthesis, 12, 1731, (1998).
13. Radical-Polar Crossover Reactions with Polymer-Supported Tetrathiafulvalene.

- Balaram Patro**, M. Merrett, J.A. Murphy, D.C. Sherrington, and M. G. J. T. Morrison *Tetrahedron Letters*, 40, 7857, 1999.
14. Tandem Radical Cyclisations on Iodoaryl Azides: Synthesis of the Core Tetracycle of *Aspidosperma* and Related Alkaloids.  
**B. Patro**, M. Kizil, **Balaram Patro**, O. Callaghan, J. A. Murphy, M. B. Hursthouse and D. Hibbs *J. Org. Chem.* 64, 7856, 1999.
  15. Radical-Polar Crossover Reactions with a Water-Soluble Tetrathiafulvalene Derivative.  
**Balaram Patro**, M. Merrett, S.D. Makin, J. A. Murphy, and K.E.B. Parkes *Tetrahedron Letters*, 41, 421, 2000.
  16. Carbon-bridged Trehalose Synthesis of Bis [( $\beta$ ,  $\beta$ )-galactopyranosyl] methane  
**B. Patro** and R. R. Schmidt *J. Carbohydrate Chem.*, 19(7), 817, 2000.
  17. Tandem Radical Cyclisations with IodoarylAzides: Formal Synthesis of ( $\pm$ ) *Aspidospermidine*  
**B. Patro** and John A. Murphy *Organic Letters*, 2(23), 3599, 2000.
  18. Betulinic acid and its pharmacological activity- A Review  
Sudhir S. Singh, **Balaram Patro**, Vinayaka Tripathi, Anil Srivastava, Satish C. Pandey, and A.C. Ghosh *Journal of Medicinal and aromatic Plant sciences* 24, 1031-37, 2002.
  19. Chemistry and Medicinal Properties of Guduchi (*Tinospora Cordifolia*) – A Review  
S.S. Singh\*, S.C. Pandey, S. Srivastava, V.S. Gupta, **B. Patro** and A.C. Ghosh *Indian Journal of Pharmacology*, 35, 83, 2003.
  20. Analytical study of charge transfer complexation of rabeprazole with 2,3-dichloro-5,6-dicyano-1,4-benzoquinone  
N.A. Khan, A.B. Chaudhury, **B. Patro** and A.D. Rani *Science Asia*, 35, 365-371, 2009.
  21. The first total synthesis of potent human chymase inhibitor SPF32629B via regioselective bromination and O-acylation strategy  
V.S. Rao, K.B. Shanthaveerappa, **B. Patro** and K. Mukkanti *Tetrahedron Letters*, 51, 2768-2770, 2010.
  22. SPF32629A and SPF32629B: Enantioselective synthesis, determination of absolute configuration, cytotoxicity, and antibacterial evaluation.  
Srinivasa Rao Vegi, Shanthaveerappa K. Boovanahalli, **Balaram Patro** and K. Mukkanti; *Eur. J. Med. Chem.* 46, 1803-1812, 2011.
  23. UPLC Method for Simultaneous Separation and Estimation of Secnidazole, Fluconazole and Azithromycin in Pharmaceutical Dosage Forms.

- Ramesh Yanamandra\*, Avinash Chaudhury, Srinivasa Rao Bandaru, **Balaram Patro**, Y.L.N. Murthy, Parimi Atchuta Ramaiah and C. S. P. Sastry E-Journal of Chemistry, 2010, 7(S1), S363-S371.
24. Facile two-step synthesis of crispine A and harmicine by cyclopropylimine rearrangement.  
Sanjay Saha, Ch. Venkata Ramana Reddy, **Balaram Patro** Tetrahedron Letters 52 (2011) 4014-4016.
25. C-C Cross-Coupling Reactions of O6-Alkyl-2-Haloinosine Derivatives and a One-Pot Cross-Coupling/O6-Deprotection Procedure  
Venkateshwarlu Gurram, Narender Pottabathini, \* Ramesh Garlapati, Avinash B. Chaudhary, **Balaram Patro**, and Mahesh K. Lakshman\*. Chem. Asian J. 2012, 7, 1853 – 1861
26. Pd-catalyzed amination of 6-halo-2-cyclopropyl-3-(pyridyl-3-ylmethyl) quinazolin- 4(3H)-one  
Ramesh Garlapati, Narender Pottabathini, Venkateshwarlu Gurram, Avinash B. Chaudhary, Venkata Rao Chunduri, **Balaram Patro**\*. Tetrahedron Letters 53, 2012, 5162-66.
27. Synthesis of indolo[2,3-a] quinolizine and hexahydro-1H-indolizino[8,7-b] indole derivatives by cascade condensation, cyclization, and Pictet–Spengler reaction: an application to the synthesis of ( $\pm$ )-harmicine.  
Chakrapani Sanaboina, Samaresh Jana, Sridhar Chidara, **Balaram Patro**, Gajendrasinh Balvantsinh Raolji, Laxminarayana Eppakayala. Tetrahedron Letters 53, 2012, 5027-29.
28. A New Rapid and Sensitive Stability-Indicating UPLC Assay Method for Tolterodine Trtrate: Application in Pharmaceuticals, Human Plasma and Urine Samples.  
Ramesh Yanamandra\*, Chandra Sekhar Vadla, Umamaheshwar Puppala, **Balaram Patro**, Yellajyosula L.N. Murthy, Parimi Atchuta Ramaiah Sci Pharm. 2012; 80: 101–114
29. Microwave assisted Westphal condensation and its application to synthesis of sempervirine and related compounds  
Sanjay Saha, T. S. Chinta Rao, Gajendra B Raolji, **Balaram Patro**, Prabhaker Risbood, Michael J. Difilippantonio, Joseph E. Tomaszewskic and Sanjay V. Malhotra Tetrahedron Letters, 2013, 54, 487-90.
30. The first total synthesis and biological evaluation of marine natural products ma'edamines A and B.  
Sanjay Saha, Ch. Venkata Ramana Reddy, T. Chiranjeevi, Uma Addepally, T. S. Chinta Rao, **Balaram Patro** Biorg. and Med Chem Lett. 2013, 23, 1013-16.
31. Facile Total Synthesis of Gymnoconjugatins A and B  
Ramakrishna Samala, **Balaram Patro**, Manas K. Basu, N. S. Kameswara Rao, K. Mukkanti, Tetrahedron Letters, 2013, 28, 3624-26.



32. Development and validation of a rapid RP-UPLC method for the simultaneous estimation of bambuterol hydrochloride and montelukast sodium from tablets  
R Yanamandra, CS Vadla, UM Puppala, **B Patro**, Y. L. N. Murthy, AR Parimi Indian J. Pharm. Sci, 72, 116, 2012.
33. Development of  $\alpha$ -glucosidase inhibitors by room temperature C-C cross couplings of quinazolinones  
Ramesh Garlapati, Narender Pottabathini, Venkateshwarlu Gurram, Kumara Swamy Kasani, Rambabu Gundla, Chiranjeevi Thulluri, Pavan Kumar Machiraju, Avinash B. Chaudhary, Uma Addepally, *Raveendra* Dayam, Venkata Rao Chunduri, **Balaram Patro**, Organic & Biomolecular Chemistry, 2013, 11. 4778-4791.
34. A Concise total Synthesis of (-)-Erinapyrone B from D- (+)-Malic acid  
Ramakrishna Samala, Venkateshwarlu Gurram, **Balaram Patro**, Narender Pottabathini, Manas K. Basu and K. Mukkanti, accepted, Synthetic Communications 2013.
35. A Novel one-pot synthesis of 7-methoxy-2-aryl thieno[3,2-b] pyridine-3-ols in domino fashion.  
Srinu Puvvala, Vinod D. Jadhav, Sheikh M. Farooq, **Balaram Patro**, Ch. Venkata Ramana Reddy accepted, Tett. Lett, 2013.
36. Synthesis and SAR studies of marine natural products ma'edamines A, B, and their analogues  
Sanjay Saha<sup>a, b</sup>, Ch. Venkata Ramana Reddy<sup>b</sup>, Shili Xu<sup>c</sup>, Saranya Sankar<sup>c</sup>, Nouri Neamati<sup>c</sup>, **Balaram Patro**<sup>a\*</sup> Biorg. and Med Chem Lett. 2013,
37. Synthesis and biological evolution of quinazolinone derivatives as potential anti-microbial agents via Pd-mediated C-N and C-C bond formation with a common catalyst system: ChemInformatics Studies  
Narender Pottabathini, Ramesh Garlapati, Venkateshwarlu Gurram, Chiranjeevi Thulluri, Rambabu Gundla, Pavan Kumar Machiraju, Suvarna Lakshmi Ch. Reddy, Uma Addepally, Venkata Rao Chunduri, **Balaram Patro** submitted to E. J. Med. Chem.

#### ARTICLES PUBLISHED IN BOOK:

1. Reactions of Arenediazonium salts with Tetrathiafulvalene and Related Electron Donors: A Study of ' Radical-Polar Crossover' Reactions invited chapter in " Advances in Free Radical Chemistry " Ed. S.Z. Zard 1999, vol 2, pp123. Nadeem Bashir, **Balaram Patro** and John A. Murphy

#### PAPERS/ POSTERS PRESENTED AT SYMPOSIA/CONFERENCES:

- 'A Highly Stereoselective Synthesis of Substituted Butadienes and Polyenes' (Poster Session) "CHEMISTRY AT THE TURN OF THE CENTURY" symposium to commemorate 150 years of the "Royal Society of Chemistry" at Calcutta, India, Dec. 5-7, 1991.

- 'Synthesis of Methylene bridged C-disaccharide' (Poster Session) ' 9th European Carbohydrate Symposium' at Utrecht, Netherlands, July 6-11, 1997.
- Invited Lecture "Development of Green Reagents for Clean Synthesis" at University of Jodhpur organised by Indian Chemical Society on 24-26th December 2001.
- Invited Panel member at Jadavpur University for the discussion on the courses of studies as an industry participant to view in the context of industry-academia Exchanges.
- Presented a popular lecture on Dipti Memorial Lecture at Bose Institute, Kolkata on "Concern for environment: genuine or propoganda?"
- Presented a popular lecture at Andhra University, Visakahpatanam on "Concern for environment: genuine or propoganda? Green Chemistry for clean synthesis.
- Presented as a Guest speaker in UGC funded "Separation and identification research techniques of organic compounds (sirto-2011)" at Govt Degree and PG college (men), Srikakulam. 15<sup>th</sup> July 2011.
- Invited lecture Presented at National Seminar on Recent Advances in Heterocyclic Chemistry being organized by the Dept. of Chemistry, JNTUH College of Engineering, Kukatpally, Hyderabad (A.P.) on Nov. 4-5, 2011
- Invited talk at KIIT TBI on "Ignition Course in Bio entrepreneurship" at Bhubaneswar in association with Research Assistance Council (BIRAC), India enterprise under Department of Biotechnology (DBT), GOI on 21-24, 2013 at its KIIT-TBI premises.
- Invited panellist "Crafting the Dream Innovation Ecosystem" on the Brainstorming Conference on STI Policy- Implementation at KIIT, Odisha on 14<sup>th</sup> September 2013.