

# Discovery Research

## Synthetic and Medicinal Chemistry



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## Medicinal Chemistry: Core Capabilities

- Hit generation and follow up
- Independent or collaborator supported hit to lead and lead optimization with consideration of potential IP issues
- Lead optimization and selection of clinical development candidate
- Salt selection and polymorph screening
- Identification, synthesis and characterization of metabolites
- Synthesis of reference standards
- Access to STN, Sci-Finder and major scientific journals
- Scale-up chemistry support
- Dedicated analytical support laboratory
- Dedicated and experienced intellectual property management team



- Spacious and well equipped air conditioned laboratories
- Integrated write up area and IP secure areas within the lab for scientists
- Advanced purification systems like Combiflash
- Non-conventional synthesis equipments like Microwave synthesizer
- Separate hydrogenation laboratory (Capacity 100 mL to 5 L)
- Highly organized chemical inventory store
- Expertise and infrastructure to handle high pressure, high/low temperature reactions



## Medicinal Chemistry: CMC Capabilities

### Chemistry Manufacturing and Control

- Dedicated Scientists with good experience in scale up and manufacture
- Excellent Kilo lab and FDA approved production facilities
- Expertise in route selection and process controls
- Expertize in enantio-selective/diastereo-selective synthesis
- Well versed in recrystallization and polymorph control techniques
- Competitive time lines and speedy delivery with quality
- Demonstrated CMC capabilities in production of in-house developed Phase 2 clinical candidate SUVN-502 on 75 Kg scale at FDA approved plant.
- Other Phase 1 clinical candidates (SUVN-G3031, SUVN-D4010 and SUVN-911) were scaled up at ~5-10 kg level
- Demonstrated CMC capabilities in production of external client's developmental candidates



## Medicinal Chemistry: Chiral Capabilities

- Expertise in designing asymmetric synthesis
- Expertise in traditional chiral resolutions via diastereoisomeric salt preparation and crystallizations
- Chiral columns for chiral analysis and separations
- Method development capabilities (selection of appropriate column, mobile phase and technique).
- In house facilities for semi-preparative chiral separations
- Availability of various chiral columns like CHIRALPAK-AD-H, CHIRALPAK-OD-H
- Collaboration with The Daicel chiral technologies at Hyderabad for super critical fluid chromatography (SFC) purification
- High speed rotary evaporators with highly efficient vacuum pumps and chillers
- Rapid turn around time



## Medicinal Chemistry: Scientific Strength and Depth

- Well qualified, Trained, experienced and Committed Scientific Staff.
- Well versed with Medicinal & contemporary Chemistry
- Skilled in various synthetic techniques
- Advanced knowledge of intellectual property issues, highest level of confidentiality
- Well acquainted with Good Laboratory (GLP) & Safety practices
- Experienced in data mining and literature searches



## Medicinal Chemistry: Literature Facilities

- Online access to several major Medicinal and Organic chemistry journals
- Access to STN and SciFinder
- In house library equipped with several volumes of reputed journals
- Access to printed literature and databases



### Collaborative and Services Projects

- Secured Tunnel for safe email exchanges
- Data upload in dedicated eRoom on real time if required
- Regular WebEx for Chemistry, Biology and project progression
- Teleconference with the collaborative partners at regular intervals
- Access to chemical structures is restricted



### Analytical Facilities

- 400 MHz NMR (Bruker) with three different probes – dual, multinuclear and fluorine
- Dedicated mass spectrometer for Med Chem - LC MS/MS API-2000 (Applied biosystems)
- LC-MS/MS API-4000 Qtrap for metabolite identification and characterization
- Several Agilent HPLC systems with UV, PDA, Fluorescence and RI detectors
- One Agilent GC system with head space and FID detector
- Semi-preparative scale chromatographic systems
- Polarimeter, DSC, TGA, UV spectrophotometer and FTIR



- Independent Quality Assurance team
- Quality System Procedures (QSP's) for Quality System Management and Standard Operating Procedures (SOP's) for Operation, Calibration, Maintenance of Equipment's
- Document and Data Control, Conducting Internal Audits, Study Specific Audits
- Dedicated Archive facility for the retention of the records
- Facility audited and approved by many global pharmaceutical companies and majority of Indian Pharma Companies



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