Monomers and Polymers for Biomedical Applications

Rao S. Bezwada
• Company Overview
• Absorbable Technology Platforms
Company Overview

Bezwada Biomedical LLC

Innovation driven company
- Over 20 US and European Patents filed
- Over 20 presentations in international conferences

Develops Absorbable Monomers and Polymers
- Over 250 new monomers developed

R&D locations in USA and India
- Lab Scale
- Pilot Scale
- Analytical facilities

For more information, please visit us at
www.bezwadabiomedical.com
Our Facilities

- 15000 square feet state of the art facility in India
- 6000 square feet corporate R&D facility in New Jersey, USA

Our lab facility in India  Our lab facility in USA
Total: 25 employees
- 3 PhD
- 6 Masters
- 8 BS level
Our Capabilities

Pilot Plant Facilities
- 10 Gallons to 50 Gallons

Production Units:
- 55 gallons to 500 gallons
Our Analytical Capabilities: US and India

Our analytical capabilities include:

- UV-Visible Spectroscopy
- Infrared Spectroscopy
- GC
- HPLC
- TLC
- Karl Fischer
- Differential Scanning Calorimetry
- Solution Viscometry
- Gel Permeation Chromatography
Expansion of Bezwada Biomedical facilities in India
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Absorbable Technology Platforms

- Absorbable Polyurethanes
- Functionalized Amino acids
- Functionalized Phenolics
- Functionalized Drugs
- Anti-microbial
- NO releasing Drugs
Technology Platforms: Attributes and Applications

**Absorbable Polyurethanes**
- **Key Attributes**
  - Derived from hydrolytically degradable isocyanates
  - Tunable physical, mechanical properties and hydrolytic degradation profile
  - Releases safe and biocompatible molecules upon degradation
- **Applications**
  - Tissue Adhesive and Sealants, Wound healing, Tissue Engineering, Coatings, Drug delivery

**Absorbable Polymers from Functionalized Drugs**
- **Key Attributes**
  - Derived from drugs and safe and biocompatible molecules
  - Tunable hydrolytic degradation profile
  - Releases drug molecule as such along with safe and biocompatible molecules upon degradation
- **Applications**
  - Controlled drug delivery, Pain management, Wound healing

**Anti-Microbial**
- **Key Attributes**
  - Based on functionalized Triclosan
  - Controllable release of Triclosan molecules along with safe and biocompatible molecules
- **Applications**
  - Anti-microbial coatings
  - Anti-microbial formulation

**NO releasing Drugs**
- **Key Attributes**
  - Drug molecules and NO releasing moiety attached via hydrolytically degradable linker
  - Controllable release profiles
- **Applications**
  - Treatment of Glaucoma, Osteoarthritis, Cardio-metabolic and inflammatory disorders
  - NO releasing coatings

**Absorbable Polymers from Functionalized Phenolics**
- **Key Attributes**
  - Derived from natural phenolic molecules such as flavonoids, chalcones and coumarins
  - Incorporates beneficial attributes of natural molecules in the polymer backbone
  - Tunable hydrolytic degradation profiles
- **Applications**
  - Drug delivery, cosmetics, radiation stable medical devices, anti-microbial coatings

**Absorbable Polymers from Functionalized Amino Acids**
- **Key Attributes**
  - Derived from amino acids functionalized with safe and biocompatible molecules
  - Tunable physical, mechanical properties and hydrolytic degradation profile
  - Releases safe and biocompatible molecules upon degradation
- **Applications**
  - Drug Delivery, Stent and Stent Coatings, Scaffolds
Advantages of our Technology over Prior Art

- Controlled degradation profiles
- Tunable physical and mechanical properties
- Derived from safe and biocompatible molecules
- Degradation products safe and biocompatible
- Bioactive molecule remains unaffected
- Enhance Bioavailability of Drugs
- Increased circulation time of drug
What can we offer

Access to Our Technology

Custom Synthesis

Contract Research

Due Diligence
Thank You