

## **MIR035**

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480 Biomedical (USA)

Abbott Vascular (USA)

American Medical Systems, Inc. (USA)

Arterial Remodeling Technologies (ART) (France)

Arterius Ltd. (UK)

Biotronik SE & Co. KG (Germany)

Boston Scientific Corporation (USA)

Bristol-Myers Squibb Company (USA)

Cedars-Sinai Medical Center (USA)





Cordis Corporation (USA)

Duke University (USA)

Elixir Medical Corporation (USA)

ELLA-CS, s.r.o. (Czech Republic)

Ethicon, Inc. (USA)

Eurocor GmbH (Germany)

JMS Co., Ltd. (Japan)

Kyoto Medical Planning Co., Ltd. (Japan)

Medicines Co. (The) (USA)

Medtronic, Inc. (USA)

Poly-Med, Inc. (USA)

Reva Medical Inc. (USA)

Tepha, Inc. (USA)

Xenogenics Corporation (USA)

4.2 Major Activities/Product Launches

First implantation of Elixir Medical's DESolve® Novolimus Eluting Coronary Scaffold System in Europe

BIOTRONIK Reports Use of First-in-Human Use of Bioabsorbable Magnesium DREAMS Scaffold

Elixir Reports Outstanding 1-year Results for Safety and Efficacy for 100% Bioresorbable DESolve® Novolimus

**Eluting Coronary Scaffold System** 

Elixir's DESolve® Novolimus Eluting Bioresorbable Coronary Scaffold System Certified by CE

Asian Heart Institute Conducts Angioplasty with New Generation Biodegradable Stent

Elixir Medical Finalizes the Enrollment for the DESolve Nx Pivotal Trial Carried Out for Fully Bioresorbable

Coronary Scaffold System

REVA Medical Presents the First Follow-Up Imaging Assessment of the ReZolve® Scaffold

Arterial Remodeling Technologies (ART) Announces First Human Use of Its Bioresorbable Stent

Biotronik Announces Positive Results from BIOSOLVE-I trial

American Heart Association Reports Igaki Tamai Biodegradable Stent Safe for Long-Term Treatment of Coronary

Artery Disease

Reva Medical's ReZolve™ Stent Bring a New Revolution to Cardiology: Claims to Stop Heart Attacks before they

Occur with Resorbable Stents





S3V Vascular Technologies Introduces first Bioabsorbable Endovascular Drug Coated Stent "3V-Avatar"in India

Abbott Initiates Clinical Trial to Evaluate and compare Absorb™ Bioresorbable Vascular Scaffold and Metallic

**Drug Eluting Stent** 

Abbott Begins Clinical Trials for ABSORB™ BTK, to treat Below-the-Knee Limb Ischemia

UK Medical Launches the First Ever Biodegradable Esophageal Stent

Abbott Announces the Success of International Clinical Trial of 'ABSORB', a Bioresorbable Vascular Scaffold in

Japan.

Arterius Ltd. Signs a New Research Collaboration

Abbott Announces the Success of Second Trial of 'ABSORB', a Bioresorbable Vascular Scaffold

Abbott Announces the CE Marking on ABSORB in Europe, World's First Drug Eluting Bioresorbable Vascular

Scaffold

Biodegradable Stent Implanted in India

Xenogenics Completes the Acquisition of the Assets of Ideal BioStent

Biodegradable Heart Stent Study Findings

ART Raises US\$ 8.5M for Biodegradable Stents

IGAKI-TAMAI's Bioabsorbable Stent Gains CE Mark Status for Peripheral Artery

Abbott Develops Effective Bioabsorbable Stent

5. PRODUCT TECHNOLOGY/RESEARCH

5.1 Introduction

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**Design and Composition** 

Raw Materials for Biodegradable Stents Synthesis

Biopolymers Used in Stents

Controlling properties

Mechanical performance

The chemistry of polymers

The selection of the materials

The steps in the processing

The degradations aspects

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Poly Lactic Acid
SR-PLA- Biodegradable Stents
Poly-Caprolactone
Polyglycolide
Biodegradable Metallic Stents
Iron-based Biodegradable Stents
Magnesium-based Biodegradable Stents
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Electroforming
Passivation Methods
Oxide Films
Electropolishing
Coatings
Nitinol & its Biocompatibility
Effect of Surface Passivation on Biocompatibility
Welding
Time Factor
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Polymer Mechanical Property
Polymer Degradation
Comparison of Biodegradable Stents with Other Stents
Cost
Significance of Clinical Trials
Drug for Biodegradable Stents
Heparin
Sirolimus
Paclitaxel
Limitations





Advantages

**Applications** 

Cardiovascular Disease

Ischemic Heart Disease

Congenital Heart Disease

Early Attempts to Treat CHD

5.2 Biodegradable Stents - Research Briefs

Biodegradable Magnesium Alloy for Medical Devices

A 59 year Old Implanted with Biodegradable Stent

Characteristics and Cyto-Compatibility of Biodegradable Polymer Film on Magnesium by Spin Coating

A Novel Radioplaque Biodegradable Stent for Pancreatobiliary Applications

Biodegradable Stent Found to be Safe for Long-term Therapy of Coronary Artery Disease

Biodegradable Stent proven to be Safe for Long-Term Treatment of Coronary Artery Disease

Biodegradable Stent and Hyper Granulation Causing Re-Stenosis Risk

**Biodegradable Bifurcation Stents** 

Rabbit Airway Model Using New Biodegradable Polydioxanone Stents

Magnesium based bioabsorbable stents Inhibits Smooth Muscle Proliferation and Stimulates Endothelial Cells In

Vitro

Biodegradable Stent for the Treatment of Benign Colorectal Anastomotic Stricture

In Vivo Study of Biodegradable Biliary Duct Stent

A New Potential Composite of MAO/PLLA using Modified Magnesium Alloy WE42 Developed

Use of Corrosion Model for Bioabsorbable Metallic Stents

New, Biodegradable Heart Stent Prove Safe in Trials

Clinical Follow-up Results of Biodegradable Stents (EXCEL™) and Durable Polymer Stent (CYPHER™) in

**Treating Coronary Artery Disease** 

Biodegradable Stents for Bronchial Stenosis Treatment

In Vivo Study of Biodegradable Poly (Trimethylene Carbonate-co-D, L-Lactide) Stent

Bio-Absorbable Stent for Treating CAD

Modeling of Deformation-Accelerated Breakdown of Polylactic Acid Biodegradable Stents

Biodegradable Stents for the First Time in India





The BEST (Biodegradable Esophageal Stent) study

Biodegradable Cardiovascular Stent Material Developed Using Electroformed Iron

Polydioxanone Biodegradable Stents for the Management of Benign Intrahepatic Bile Duct Strictures

Tomography Study of a Biodegradable Stents compared to Durable Polymer-Coated Limus –Eluting Stent

Coating Bio-Absorption and Chronic Bare Metal Scaffolding versus Fully Bio-Absorbable Stent

Researcher Develops Biodegradable Stent for Hearts Patients

Biodegradable Stent and Severe Epithelial Hyperplasia Complication

A Potential, Non-Randomized Multicenter Clinical Trial of Absorbable Magnesium Stents for Coronary Implants

Biodegradable Heart Stents

Absorbable Metal Stents

Drug-Eluting and Absorbable Stents Push Interventional Frontiers Separate Study Fine-Tunes Timing of

**Anti-Clotting Drugs** 

First Successful Implantation of a Biodegradable Metal Stent into the Left Pulmonary Artery of a Preterm Baby

Implantation of the First Absorbable Metal Stents (AMS) in Humans

Assessment of a Dissolvable Urethral Drainage Stent in a Swine Model

Biodegradable Stents – A Disappearing Act

Biodegradable Polyglycolic Acid Spiral Stent and Endoscopic Urethroplasty

6. CORPORATE DIRECTORY

7. PATENTS