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Technology Catalysts International (TCI) was founded in 1979 to provide consulting services that satisfy the licensing and business research needs of the pharmaceutical and chemical industries. We specialize in technology licensing, technology assessment, and technology portfolio management. The firm is headquartered in Falls Church, Virginia, a suburb of Washington D.C. Our global network includes offices in Japan, S. Korea, India, Argentina, the United Kingdom, Germany, China, and Czech Republic.

Our research staff is composed of professionals with backgrounds in a variety of technical disciplines with additional expertise in international marketing, licensing, finance, and business development. The breadth of our experience assures clients of high quality, actionable information, and complete coverage on topics of interest.

TCI's core consulting services are based on continuous monitoring of global technology development. We provide consulting and technology transfer services to leading product developers and manufacturers in North and South America, Europe, and Asia. Our client base consists of small, medium, and large corporations.

For more information on our services and capabilities, please visit our website at:

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# Parenteral Depot Technologies

FIRST EDITION

Technology and Business Review

# Report Summary

In the past decade, several companies have emerged as leaders in the development of injectable depot systems and next generation parenteral technologies. Through years of extensive research in material science, research groups have been successfully able to establish therapeutic programs based on the integration of effective polymer technologies to provide long acting drug release. Whether for the delivery of small molecules or proteins and peptides, companies have been taking advantage of advances in polymer science to address clinical unmet needs. Some companies are taking the initiative to develop formulation and manufacturing expertise in these depot delivery systems while others are vying for the chance to integrate their drugs products into carrier technologies through collaborations.

Based on the technological advances in parenterals and biopharmaceuticals, there are now over thirty companies developing sustained release depot injection technologies for approximately fourteen differentiated molecular targets – a relatively limited number of drugs, some of which are already present in the market. Products approved and in development are focused on treating major conditions, such as cancer, pain, growth deficiencies, and central nervous system disorders.

A major factor driving the continued interest in depot-based products is the importance of increasing patient compliance through reducing frequently administered injections. Furthermore, the need for safe, reliable products with diminished toxicity provides incentives for reformulation of existing drugs in addition to establishing new entities with high therapeutic effect. Specialty drug delivery companies such as SurModics and Alkermes have shown credibility in bringing effective long-acting depots to the market, and continue to work with others to enhance their technologies.

# The Market, Pipelines, Opportunities

This report provides insight into the types of injectable depot technologies being developed in conjunction with active agents. Typical administration of such products takes the form of intramuscular, gluteal, or subcutaneous injections, and excludes formulation technologies given intravenously. TCI covers the market for these technologies and associated launched products based on historic product sales and trends in the small molecule parenteral and biopharmaceutical industries. There are more than thirty companies described in detail in this report that are active in the development of various approaches to depot systems, both in early or late stages.

## Key Information Presented

### Product and Technology Introductions

- Overview of controlled release depot formulation
- Companies categorized by polymer approach
  - Polymers based on PLGA microspheres
  - Lipid structures
  - Polysaccharides
  - Amino acid building blocks
- Various chemicals and peptides in development
- Major depot-related industry activity within large and specialty pharmaceutical companies

### Market Landscape Analysis of Injectable Depot Technologies

- Sales of leading depots in 2009
- Worldwide depot market growth from 2005-2009
- Market share by therapeutic category
- Regional market share of triptorelin
- Development of generic depot products
- Information related to recent depot drug approvals and market impact

### Technology Licensing Opportunities

- Detailed profiles of depot technologies
- Technologies from US, Asia, and EU
- Updated contact information to initiate licensing agreements

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## Technology and Business Review

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