



Technology Catalysts International Corporation  
605 Park Avenue, Falls Church, VA 22046 USA  
Telephone: (703) 237-9600  
Facsimile: (703) 237-0042  
E-Mail: [info@technology-catalysts.com](mailto:info@technology-catalysts.com)  
Internet: [www.technology-catalysts.com](http://www.technology-catalysts.com)

## **PARENTERAL DEPOT TECHNOLOGIES**

### ***TECHNOLOGY & BUSINESS REVIEW***

## **TABLE OF CONTENTS**

PREPARED BY:  
TECHNOLOGY CATALYSTS INTERNATIONAL

SEPTEMBER 2010

Copyright© 2010 Technology Catalysts International Corporation

## Table of Contents

### INTRODUCTION & EXECUTIVE SUMMARY

#### CHAPTER I: BACKGROUND OVERVIEW

Polymers in Depot Delivery  
Administration and Elution Process  
Depot Creation Methodologies

#### CHAPTER II: POLYMERS AND MICROSPHERE DEPOT TECHNOLOGIES

Polymers and Microparticles

*Figure 1: Drug Release from Biodegradable Microspheres*

Properties and Applications of Polymers -- PLGA

*Table 1: Biomaterials for Drug Delivery Systems*

*Table 2: Biodegradation of PLGA*

Current Technologies

*Table 3: Key PLG-based Carriers for Prolonged Release Applications*

*Table 4: Marketed Products Using PLGA polymers as Depot Formulation*

*Figure 2: Mixject Device for use with Trelstar Products*

*Figure 3: 3-month Leuprolide CHRONIJECT™ Microsphere*

*Figure 4: Q-Sphera Microparticles Loaded with Leuprolide Acetate*

*Table 5: Unlaunched Depot Products Utilizing a PLGA-based Polymer Platform*

#### CHAPTER III: NON-PLGA POLYMERIC TECHNOLOGIES

Lipid-based Systems

*Figure 5: Camurus FluidCrystal Injection Process*

*Table 6: Pipeline Development Program for novosom AG and Camurus*

Polysaccharide Polymers

*Figure 6: Kytogenics NOOC polymer*

*Table 7: Recent Licensing and/or Co-development Deals Involving SurModics' DDS*

Amino Acid-based Degradable Polymers

*Figure 7: DSM's Polyesteramide*

#### CHAPTER V: MARKET LANDSCAPE

Product Landscape

*Table 8: Injectable Depots and Their Global Brands*

Current Worldwide Market for Injectable Depots

*Table 9: Branded Commercially Available Depot Drugs*

*Figure 8: Parenteral Depot Market Size, 2005-2009 (\$ Billions)*

*Figure 9: US Sales out of Worldwide Depot Sales (2005-2009)*

*Figure 10: 2009 Depot World Market Share by Therapeutic Category*

*Figure 11: Regional Breakdown of Worldwide Triptorelin Acetate Market*

*Table 11: Takeda Revenues for Leuprorelin (Billions of Yen)*

*Table 12: Marketing Companies for the Various Lupron Products Sold Globally*

Current Depot Activity

Industry Activity Specific to CNS Disorders

*Table 13: Product Comparisons between Risperdal Consta and Invega Sustenna*

Market Outlook and Opportunities

*Table 14: 2008-2009 Worldwide Sales of Protein/Peptide Drugs*

*Table 15: Prominent Biologics and Patent Expirations*

*Table 16: Patents – Peptides and Small Molecules (NDA Pathway for US)*

## **CHAPTER VI: TECHNOLOGY PROFILES**

35 injectable sustained release formulation and device platforms are profiled

## **APPENDIX A: DEVELOPING DEPOT PIPELINE PRODUCTS**

## **APPENDIX B: PARENTERAL DEPOT TECHNOLOGIES**

Total report length ~ 178 pages

# Technology Catalysts International

605 Park Avenue  
 Falls Church VA 22046  
 Telephone: (703) 237-9600  
 Facsimile: (703) 237-0042

## Report/Database Order Form

Please check the box of the report(s) that you are interested in ordering from TCI. Please fill in the required fields electronically and fax order form to (703) 237-0042 or e-mail to [pdeeds@technology-catalysts.com](mailto:pdeeds@technology-catalysts.com). Note: All prices are U.S. dollars

| Quantity        |             | Report Title  | Cost     |
|-----------------|-------------|---|----------|
| Online version* | PDF version |   |          |
|                 |             | <b>Novel Drug Delivery Systems Series Package – January 2010</b><br>== All six 28 <sup>th</sup> Edition reports & two online databases == | \$25,000 |
|                 |             | <b>Oral Drug Delivery Systems and Materials - 28<sup>th</sup> Edition</b><br><i>(print version published 1/2010)</i>                      | \$5,950  |
|                 |             | <b>Parenteral &amp; Implant Drug Delivery Systems - 28<sup>th</sup> Edition</b><br><i>(printed version published 1/2010)</i>              | \$5,950  |
|                 |             | <b>Transdermal &amp; Topical Drug Delivery - 28<sup>th</sup> Edition</b><br><i>(print version published 1/2010)</i>                       | \$3,950  |
|                 |             | <b>Transmucosal Drug Delivery - 28<sup>th</sup> Edition</b><br><i>(print version published 1/2010)</i>                                    | \$1,950  |
|                 |             | <b>Inhalation &amp; Nasal Drug Delivery - 28<sup>th</sup> Edition</b><br><i>(print version published 1/2010)</i>                          | \$3,950  |
|                 |             | <b>Delivery of Proteins &amp; Peptides - 28<sup>th</sup> Edition</b><br><i>(print version published 1/2010)</i>                           | \$5,950  |
|                 | N/A         | <b>Drug Delivery Pipelines Online</b><br><i>(only accessible via internet)</i>  | \$4,950  |
|                 | N/A         | <b>Drug Delivery Deals Online</b><br><i>(only accessible via internet)</i>  | \$1,950  |

\*NDDS Online version is accessed via the internet and updated on a continual year-round

| Quantity |         | Report Title  | Cost    |
|----------|---------|---|---------|
| PDF      | Printed |   |         |
|          |         | <b>Cancer Vaccines: Pipelines &amp; Development</b><br><i>(published 10/2010)</i>   | \$3,950 |
|          |         | <b>Orally Disintegrating Tablet and Film Technologies - 6<sup>th</sup> Edition</b><br><i>(published 9/2010)</i>   | \$4,950 |
|          |         | <b>Parenteral Depot Technologies</b><br><i>(published 9/2010)</i>   | \$1,950 |
|          |         | <b>Strategies for Bioavailability Enhancement of Poorly Soluble or Permeable Drugs - 6<sup>th</sup> Edition</b><br><i>(published 1/2007 – discounted 50%)</i> | \$2,475 |
|          |         | <b>RNAi and Antisense Therapeutics</b><br><i>(published 10/2008 – discounted 50%)</i>   | \$2,475 |
|          |         | <b>Active Skin Care, Delivery Systems for OTC and Cosmetics</b><br><i>(published 9/2004 – discounted 50%)</i>   | \$1,975 |

- Site license fee (more than 5 users).....\$2,000 (NDDS Online package is \$10,000 per 5 additional users)
- Extra copies of any printed report.....\$500
- Previous editions of above reports are available for purchase at 50% discount; please contact TCI

*We agree to limit the circulation of this report to employees of our corporation or subsidiaries and joint ventures in which our corporation holds at least a 75 percent interest.*



# Technology Catalysts International

605 Park Avenue  
Falls Church VA 22046  
Telephone: (703) 237-9600  
Facsimile: (703) 237-0042

## Report/Database Order Form

Please fill in the required fields electronically and fax order form to (703) 237-0042 or e-mail to [pdeeds@technology-catalysts.com](mailto:pdeeds@technology-catalysts.com).

Please fill in the following (please print or type clearly):

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Signature: *Not necessary if form is sent via email* Date: \_\_\_\_\_

There are three easy ways to pay – please check form of payment:

1. Credit Card

2. Check

3. Wire Transfer

1. Please charge credit card:

MASTERCARD

VISA

AMEX

Name on card (if different from above): \_\_\_\_\_

Card #: \_\_\_\_\_ Expiration Date (MM/YYYY): \_\_\_\_\_

Security Code (3 or 4 digit #): \_\_\_\_\_ Total Amount Due (US\$): \_\_\_\_\_

2. Please send your check to:

Technology Catalysts International  
605 Park Ave  
Falls Church, VA 22046  
USA

3. Wire Transfer Information:

Please contact TCI directly for account information

