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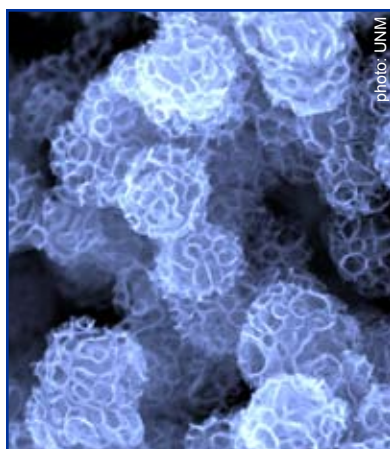
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Nanotechnology in Health Care

US Industry Study with Forecasts for **2014 & 2019**

Study #2622 | June 2010 | \$4800 | 351 pages

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The critical need for new or improved therapies for many medical conditions will promote the adaptation of nanotechnology to an expanding number of pharmaceuticals through 2014 and beyond.

US demand to rise 17.1% annually through 2014

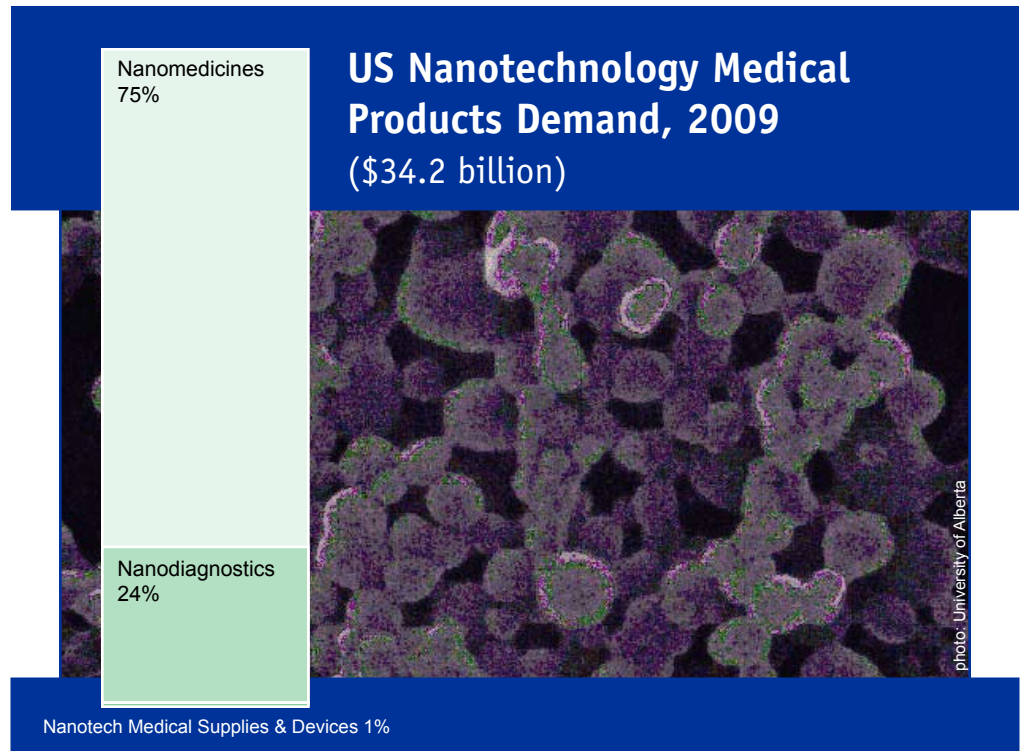
Demand for nanotechnology medical products will increase over 17 percent per year to \$75.1 billion in 2014. Afterwards, the increasing flow of new nanomedicines, nanodiagnostics, and nanotech-based medical supplies and devices into the US marketplace will boost demand to \$149 billion in 2019.

Nanomedicines to remain dominant segment

The total US market for nanomedicines will command strong growth over the long term, rising to \$59 billion in 2014 and sustaining a strong upward pace to \$118 billion in 2019. Treatments based on humanized and fully human monoclonal antibodies and, to a lesser extent, nanoparticles and crystalline nanoparticles, will drive gains. Therapies for advanced cancers, autoimmune diseases, neurological disorders and viral infections will lead new product introductions and command the strongest growth opportunities. Gradually, applications of nanomedicines will extend into all major therapeutic classes, encompassing numerous formulations and delivery systems.

Nanodiagnostics to grow nearly 7% annually

Among medical diagnostic products, immunoassays based on monoclonal antibodies and DNA probes are greatly



enhancing the speed, accuracy, capabilities and cost-effectiveness of *in vitro* diagnostic testing, drug discovery and medical research procedures. Nanoparticle formulations of superparamagnetic iron oxide, gadolinium, perfluorocarbon and specialty polymers will broaden *in vivo* imaging capabilities by enabling the detection of tumors, plaque, genetic defects and other disease states at much earlier stages and with lower, safer concentrations of injected compounds. Reflecting anticipated performance advantages over existing products and an expanding range of new commercial offerings, demand for nanodiagnostics is projected to increase 6.8 percent per year to 2014 and continue rising at a good pace to 2019.

Supplies, devices to grow fastest from small base

Within the medical supplies and devices segment, nanoscale materials are already realizing significant demand as active ingredients. In the longer term, advances in nanotechnology will lead to the introduction of new, improved medical supply and device coatings as well as a new, diverse group of medical implants with nanosensor components. Through 2014, demand for medical supplies and devices based at least partially on nanomaterials is projected to grow 57 percent annually to \$5.1 billion. This amount will more than triple by 2019 as nanosensors, nanofibers and nanoparticles broaden their penetration.

Sample Text, Table & Chart

NANOTECHNOLOGY MEDICAL SUPPLIES & DEVICES

Wound Closures

Advances in nanotechnology are expected to lead to the introduction of improved wound closure products and systems. However, nanotechnology will make only a limited penetration into this area because of the well-established safety and effectiveness of traditional products. Demand for nanotechnology-related wound closures is forecasted to increase on the anticipated introduction of nanotechnology-based sutures that incorporate nanocoatings or nanomaterials. The introduction of advanced tissue sealing technologies is expected to push up demand to a projected \$1.5 billion by 2019.

Developmental activities involving wound closure technologies include efforts to adapt nanoparticle formulations of biodegradable polylactides and polyglycolides to absorbable suture materials. The advantage of these nanopolymers is their breakdown by tissue enzymes into compounds that are metabolized internally and exit the body through the regular metabolic pathway. They also appear to cause minimal, if any, tissue reaction during the healing process and do not produce any harmful byproducts.

Several nanopolymers under development appear to be well-suited for use in suture coatings. More significantly, new, unique nanomaterials are being developed for non-invasive surgical adhesive applications. One such nanomaterial is surgical glue based on a substance naturally found in mussels. The substance, which is a mixture of proteins, forms a strong bond and is biocompatible and nontoxic. Researchers at Purdue University are working on a nanoformulation of the substance for use as a surgical wound closure that could replace sutures in less invasive procedures.

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TABLE VIII-6

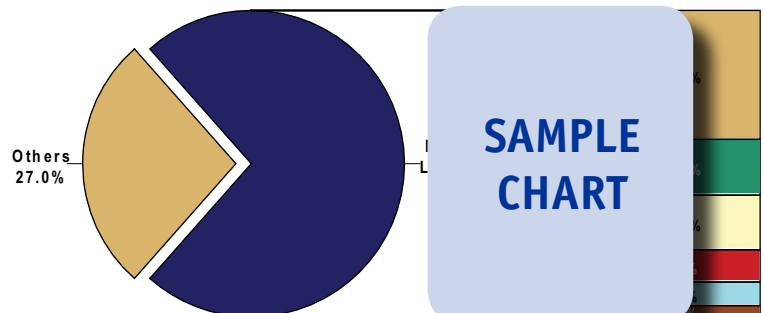
NANOTECHNOLOGY MEDICAL PRODUCTS DEMAND IN OTHER APPLICATIONS (million dollars)

Item	1999	2004	2009	2014	2019
Chronic Conditions (million \$ nanotechnology products/condition)					
Nanotech Med Prdts in Other Applications					
By Product:					
Nanomedicines					
Nanodiagnostics					
Nanotech Medical Supplies/Devices					
By Application:					
Ophthalmic Conditions					
Medical Research/Drug Discovery					
Respiratory Conditions					
Endocrine Conditions					
Gastrointestinal Conditions					
Dermatological Conditions					
All Other Applications					
% other					
Nanotech Medical Products Demand	55				100

SAMPLE TABLE

CHART IX-1

NANOTECHNOLOGY MEDICAL PRODUCTS MARKET SHARE BY COMPANY (\$34.2 billion, 2009)

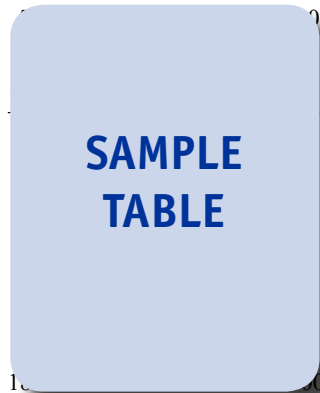


SAMPLE CHART

Sample Profile, Table & Forecast

TABLE V-2
MONOCLONAL ANTIBODY NANOMEDICINES
DEMAND BY INDICATION
 (million dollars)

Item	1999	2004	2009	2014	2019
Chronic Conditions (million \$ monoclonal antibodies/condition)					
MAB-Based Nanomedicines					
Cancer					
Central Nervous System Conditions					
Ophthalmic Conditions					
Infective & Viral Conditions					
Respiratory Conditions					
Gastrointestinal Conditions					
Other					
% monoclonal antibodies Nanomedicines Demand					



COMPANY PROFILES

NanoCarrier Company Limited
 5-4-19 Kashiwanoha, Kashiwa
 Chiba 277
 Japan
 81-4-7169-6550
<http://www.nanocarrier.co.jp>



Key Products: ... treatments based on micellar ...

NanoCarrier's development of nanotechnology-enabled ... for cancer treatment. The Company's use of micellar nanoparticles ... to tumor sites in the body. Nanoparticles in range in size from 20 to 100 nanometers, are composed of biocompatible block copolymers that contain hydrophilic polyethylene glycol and hydrophobic polyamino acid. The formation of micelles occurs when the block copolymers diffuse in water. These nanoparticles are not easily recognized as foreign bodies by the immune system, thereby enabling them to circulate in the blood for a longer period of time after intravenous injection to increase drug efficacy. NanoCarrier's micellar nanoparticles can be adapted to various active pharmaceutical ingredients.

Among its micellar-related technologies is the MEDICELLE system, which relies on the electric charge of water-soluble compounds to bind them to the inner core of micelles thereby creating micellar nanoparticles. The Company has also developed the NANOCAP system, which physically transforms poorly soluble drug ingredients into nanoparticles for sustained-release intravenous administration. Specific therapeutic products under development by NanoCarrier include NK105, a nanoparticle version of paclitaxel, an anticancer drug mainly

"An expanding number of approved products and indications will keep monoclonal antibodies the largest and most successful nanomedicines on the market. Specifically, total demand for monoclonal antibody therapies is forecast to increase over 20 percent annually to \$43.4 billion in 2014. Efficacy and patient outcome advantages over conventional pharmaceuticals and biologicals in the treatment of cancer, autoimmune disorders and other serious diseases will promote gains."
 --Section V, pg. 75

OTHER STUDIES

Vaccines

US demand for vaccines will advance 5.6% annually through 2014, driven by the development of new vaccines to treat complex human diseases, such as cancer. Public health recommendations for adult and adolescent immunization will produce continued strong sales in this segment, which has reached the level of pediatric vaccines sales. This study analyzes the \$10.8 billion US vaccines industry, with forecasts for 2014 and 2019 by product. It also evaluates company market share and profiles US industry competitors.

#2667 August 2010 \$4700

Implantable Medical Devices

US demand for implantable medical devices will increase 8.3% annually through 2014. Gains will be driven by the development of next generation devices based on new technologies and improved materials. Spinal implants, cardiac stents and orthobiologics will be among the fastest growing product categories. This study analyzes the \$33 billion US implantable medical device industry, with forecasts for 2014 and 2019 by procedure, material and type. It also evaluates company market share and profiles 36 industry competitors.

#2595 April 2010 \$4800

World Wound Management Products

Global wound management product demand will rise 4.6% yearly through 2013. Best growth prospects include tissue sealants, foam and alginate wound dressings, growth factors, bioengineered tissue substitutes and anti-adhesion agents. China will be the fastest growing market, while the US remains the largest. This study analyzes the global market for wound management products, with forecasts for 2013 and 2018 by type, world region and for 13 countries. It also evaluates company market share and profiles industry players.

#2578 February 2010 \$5800

Infection Prevention Products & Services

US demand for infection prevention products and services will increase 4.8% annually through 2013. The best growth opportunities are anticipated in safety-enhanced devices that reduce the risk of health care acquired infections. Medical waste disposal and sterilization supplies, as well as high level disinfectants, will also do well. This study analyzes the \$18.6 billion US infection prevention industry, with forecasts for 2013 and 2018 by product, service and market. It also evaluates market share and profiles industry players.

#2526 August 2009 \$4700

In Vitro Diagnostics

US demand for *in vitro* diagnostic (IVD) products is forecast to increase 5.4 percent annually through 2013. Clinical chemistry and immunoassay will remain the top two IVD methodologies. Nucleic acid testing products will generate the fastest demand gains while endocrine condition testing remains the largest application. This study analyzes the \$17.6 billion US IVD industry, with forecasts for 2013 and 2018 by product, application and market. It also evaluates company market share and profiles industry players.

#2455 March 2009 \$4800

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