Industry Watch

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Eli Lilly and Company Japan K.K., and Takeda Chemical Industries, Ltd. (TSE: 4502) have signed an agreement on joint development and co-marketing for ruboxistaurin mesylate (protein kinase C [PKC] β Inhibitor, LY333531) in the Japanese market. PKC β Inhibitor is an investigational compound for oral administration discovered and developed by Eli Lilly. It is currently in Phase 3 clinical studies outside of Japan (Phase 2 studies have been initiated in Japan).

In the agreement, Eli Lilly Japan, a subsidiary of Eli Lilly and Company and Takeda will jointly develop and submit an NDA in Japan for the treatment of diabetic peripheral neuropathy and diabetic retinopathy, and subsequently, co-market this product in Japan.

Under the hyperglycemic condition, PKC β — one of the enzymes PKC known as adjusters of various cellular functions — becomes overactive and is implicated in the underlying process of microvascular damages of angiogenesis and vascular flow disorder, leading to diabetic microvascular complications.

Preclinical data have demonstrated that ruboxistaurin is a specific inhibitor of PKC β. Ongoing clinical trials conducted by Eli Lilly are investigating ruboxistaurin as a treatment for diabetic peripheral neuropathy, diabetic retinopathy (damage to the small blood vessels of the eye), and diabetic nephropathy (damage to the small blood vessels of the kidneys), the three major diabetic microvascular complications.

Eli Lilly Japan and Takeda expect to contribute to the treatment of diabetic microvascular complications once this investigational agent is approved and launched, which could represent a significant benefit to the patients with diabetes.

About Takeda Chemical Industries, Ltd.
Takeda is a research-based global company with its main focus on pharmaceuticals. As the largest pharmaceutical company in Japan and one of the industry's leaders worldwide, Takeda is committed to strive toward better health for individuals and progress in medicine by developing superior pharmaceutical products. It is actively dedicated to enhance its pipeline for future growth through alliance as well as in-house R&D activities.

Contact Details:
Takeda Chemical Industries, Ltd.
Address: 1-1, Doshomachi 4-chome, Chuo-ku, Osaka 540-8645, Japan
Tel: +81 6 204 2038
Fax: +81 6 6204 2880
URL: www.takeda.co.jp

About Eli Lilly and Company
Eli Lilly and Company is a leading, innovation-driven corporation committed to developing a growing portfolio of best-in-class and first-in-class pharmaceutical products that help people live longer, healthier and more active lives. Lilly products treat depression, schizophrenia, attention-deficit hyperactivity disorder, diabetes, osteoporosis and many other conditions.

Contact Details:
Eli Lilly Japan K.K.
Address: Sannomiya Plaza Building, 7-1-5 Isogami-dori, Chuo-ku, Kobe 651-0086, Japan
Tel: +81 78 242 9000
Fax: +81 78 242 9502
URL: www.lilly.co.jp
TerraMarine Pharmaceuticals has been formed to focus on the pharmaceutical potential of New Zealand’s unique flora and fauna, with aims to create wealth using New Zealand knowledge. The partners in the joint venture are Crop & Food Research, the National Institute of Water and Atmospheric Research (NIWA), and the Malaghan Institute of Medical Research. According to TerraMarine spokesman Dr. Stephen Lorimer, all three organizations bring complementary skills in research excellence.

“This exciting new project is a New Zealand biotechnology venture which in time will give New Zealand companies an opportunity to invest in the development of health products with global potential,” said Lorimer. The new venture also involves collaborators from New Zealand universities and clinicians.

The hunt for products with pharmaceutical potential involves the identification of molecules with anti-inflammatory properties from New Zealand’s unique plants and marine life. These molecules will then form a starting point from which potential drug leads can be developed. Initial research will target identification of new non-steroidal anti-inflammatory drugs for diseases such as arthritis and asthma.

Dr. Lorimer says that work was already underway and progress was good. “While it’s a little early to say much yet, our initial work shows promise.” He believes New Zealanders will benefit because the research is looking for drugs for diseases prevalent in this country. The market for non-steroidal, anti-inflammatory drugs is an increasingly large one.

“Global populations are ageing and more people require medication for age-related inflammatory diseases such as arthritis. There is also a global increase in the incidence of allergenic diseases such as asthma.”

Research being undertaken by TerraMarine has funding of NZ$8 million (US$5.16 million) over five years from the government’s Foundation for Research Science & Technology.

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About Crop and Food Research
The New Zealand Institute of Crop and Food Research (trading as “Crop and Food Research”) is one of New Zealand’s nine government owned research institutes (CRIs). They provide quality research, technologies and services to support the development of high quality products in the following areas — Arable Foods, Vegetable Foods, Seafood, Ornamentals, Animal Feed, Plant Products and Forestry.

Contact Details:
Address: Canterbury Agriculture & Science Centre, Gerald St Lincoln, New Zealand
Tel: +64 3 325 6400
Fax: +64 3 325 2074
URL: www.crop.cri.nz

About Malaghan Institute of Medical Research
The Malaghan institute of Medical Research is a charitable trust and New Zealand’s only independent medical research institute, dedicated to the relief of human suffering through scientific research into the causes, nature and treatment of diseases.

Contact Details:
Address: PO Box 7060, Wellington South, New Zealand
Tel: +64 4 389 5096
Fax: +64 4 389 5095
URL: www.malaghan.org.nz

About National Institute of Water and Atmospheric Research (NIWA)
NIWA’s mission is to provide a scientific basis for the sustainable management and development of New Zealand’s atmospheric, marine and freshwater systems and associated resources. Established in 1992 as one of nine New Zealand Crown Research Institutes (CRIs), NIWA operates as a stand-alone company with its own board of directors and its shares held by the Crown.

Contact Details:
Contact Name: Geoff Baird
Tel: +64 4 386 0543
Fax: +64 4 386 0574
Email: g.baird@niwa.co.nz
URL: www.niwa.cri.nz
Singapore’s Temasek Holdings has invested US$90 million for a 16.4% stake in US-based Quintiles Transnational Corp., the world’s largest provider of clinical trial and commercialization services to the pharmaceutical and biotech industries. Quintiles is now a private, wholly-owned subsidiary of Pharma Services Holdings (a part of the Temasek Holdings consortium), and it will be removed from the NASDAQ listing.

Other members of the consortium are:

- Dr. Dennis Gillings, chairman and founder of Quintiles;
- One Equity Partners, the private equity arm of Bank One Corporation in the US;
- Texas Pacific Group;
- Mitsui & Co of Japan; and
- Perseus-Soros BioPharmaceutical Fund, which involves the Soros Fund Management of billionaire George Soros.

Through the acquisition of Quintiles, Temasek Holdings hopes to advance with the growth of the biotech and healthcare sectors in Asia. According to S Iswaran, Temasek’s Managing Director of Strategic Development, the merger will benefit the company greatly as Quintiles has strong management and a global footprint. Furthermore, in this knowledge-intensive industry, more and more companies are outsourcing their clinical trials and product sales.

About Quintiles Transnational Corp.

Quintiles Transnational Corp. is the world’s leading provider of contract product development and commercialization services. It offers a full spectrum of facilities: from early compound development, laboratory services and regulatory submission through sales and marketing. It is dedicated to providing high quality healthcare to over 49 countries around the world. It specializes in bringing new medicines to market faster, and is a member of the Fortune 1000. Headquartered near Research Triangle Park in North Carolina, USA, Quintiles has offices in over 40 countries with more than 19,000 employees. In 2002, the company reported a net profit of US$127 million.

Contact Details:
Quintiles Transnational Corp.
Address: 4709 Creekstone Drive, Suite 200
Durham, North Carolina 27703, USA
Tel: +1 919 998 2000
Fax: +1 919 998 9113
URL: www.quintiles.com
Having identified the demand for enzyme-based food technology, Foo Ko Kin went ahead to set up CerealTech Pte Ltd. in 1995, and took on the challenge of providing baking industry with much needed specialist services and products that were lacking in the region. Leveraging on the expertise with over 150 years of combined experience, this one-and-only privately owned enzyme-based food ingredients manufacturer offers effective technical and marketing solutions throughout the whole spectrum of the industry, including maximizing product value, business performance and profitability.

From the start, CerealTech has been focusing on innovative ideas and solutions, with strong emphasis on creativity, technology and R&D. To date, it has invested SGD2 million (US$1.2 million) in establishing its manufacturing and R&D facilities in Singapore. Currently, it has advanced from its core focus service area — in the application and development of micro-ingredients as original design manufacturer of functional ingredients — to provide integrated solutions that can address every level of customers’ business operation. These services include:

- Micro-ingredient enzymes systems;
- Process optimization and support;
- Engineering/technical and production solutions;
- Product research and development;
- Training;
- Marketing solutions.

CerealTech pioneered in the enzyme technology and shelf life extension technology. The technology has received recognition from the Economic Development Board (EDB) in November 2002 and the company received a grant from EDB Innovation Development Scheme in support of CerealTech’s R&D project — to develop emulsifier-free bread improver system for white sandwich bread, wholemeal, grain and crusty bread and roll products.

After nine months of joint research effort, in February 2003, CerealTech helped placed Unique Enzyme-based Food Manufacturing Facility in Australasia’s largest food manufacturer — Goodman Fielder — on the global map by creating a new type of bread that remains soft and fresh without any additional artificial ingredients. The formulation involves only the latest natural micro-ingredients and minimal processing. In September 2003, CerealTech helped Sunshine Bakery to develop its “Now Softer than Ever” new enriched soft bread and softmeal bread. The new product has been well received by customers and positive sales response for the product series.

The company is actively taking on a few special enzymes and improvers R&D projects, focusing particularly on:

- Introducing Chinese wheat to be incorporated in Western bread making;
- For noodle manufacturing;
- For Asian food products.

CerealTech has invested heavily in the development of new micro-ingredients and will continue to focus on the baking industry since there is much growth potential in the sector.

In an attempt to maintain its leadership in the industry in Asia Pacific, the company has forged strategic partnerships with technology partners, such as Innovative Cereal Systems of Portland (US), Baking Technology Center (Netherlands), and Macphie Glenbervie Ltd. (Scotland).

CerealTech is currently supplying micro-ingredients and various specialist services and products to clients from countries such as Singapore, Malaysia, Brunei, Indonesia, Philippines, Vietnam, Myanmar, Greater China, Australia, New Zealand and Middle East. It also has plans to harness the latest technology from its European alliances to venture into food services and manufacturing sector, including preservation and packaging of ambient and frozen foods.
Milestones of CerealTech

1995  Foo Ko Kin sets up CerealTech.
1996  Secures Sunshine Bakery as its first customer.
1997  Expands client base to include Sara Lee (Asia) and Laucke Flour Mills (Australia).
1998  Opens manufacturing cum application research facilities.
1999  Canterbury Mills/Rivermill Bakery (New Zealand) adopts the service.
2000  Introduces McDonald's Asia Pacific; expands into China and other countries.
2001  Expands business sectors to include process management and engineering.
2002  Turnkey development of SCORE's in-house bakery and plant; EDB provides grant for R&D projects in enzyme
development and shelf life extension technology for the baking industry.
2002/2003 Begins joint R&D with Goodman Fielder; launches a world's first new style white bread that stays soft and fresh
without artificial ingredients.
2003  Secures project with US Potato Board to study the functional application of dehydrated potato flour in Asian
type foods; helps Sunshine Bakery to launch new Enriched Soft White Bread and Softmeal Bread based on
softness platform — “Now Softer than Ever”.

Foo Ko Kin’s fascination with the food industry began when he found a vacation
job as a baker’s apprentice in a Danish bakery. That first introduction fuelled a lively
curiosity in the 16-year-old Ko Kin to learn more about the industry, the technology
behind food manufacturing and the science that was involved in everyday foods like
breads, cakes and pastries.

This led Ko Kin to enroll with the Cassio College in Watford England. At Cassio
College he was rewarded with the Bill Meehan Trophy for being Student of the Year
and the Darvell Cup for Excellence in Confectionery. He graduated from Cassio College
in 1979, with a College Diploma in Bakery Organization (City & Guilds Part I & II in
Bakery and Confectionery) and a Royal Institute Certificate of Public Health and
Hygiene. He then went on to South Glamorgan Institute of Higher Education (Faculty
of Science) in Cardiff, Wales. In 1989, he enrolled for a three-year MBA course with
Strathclyde Graduate Business School, University of Strathclyde, in Glasgow, Scotland.
He also completed a Competitive Marketing Strategies Program with the University of
California, Berkeley Extension.

Following his passion, he successfully applied for a position as Product Manager
with a leading confectionery company where he was responsible for the development
of a range of chocolates, candies and confectionery products including the launch of the “Singapore Host” brand.

Foo subsequently left to join the Robinson Group as Operations Manager for its D&W Bakery Division, Bangkok,
where he was instrumental in the successful launch of the group’s entry into food manufacturing activities in Thailand.
He then went on to gain valuable hands-on experience and knowledge across various functions of the food industry,
from operations to manufacturing processes, product development, marketing and business development.

It has always been Foo’s dream to found a company that would lead with innovative ideas and solutions for the
industry — a catalyst that would spark new and exciting breakthroughs in food technology, manufacturing, R&D
and marketing.

In 1995, he left the corporate world to set up CerealTech to take on the challenge of providing the industry
with much needed specialist services and products that were lacking in the region.

About the Founder and Chief Executive — Foo Ko Kin

Contact Details:
Address: 3 Woodlands Link, Singapore 738720
Tel: +65 6755 5580
Fax: +65 6759 5074
Email: enquiry@cerealtech.com
URL: www.cerealtech.com