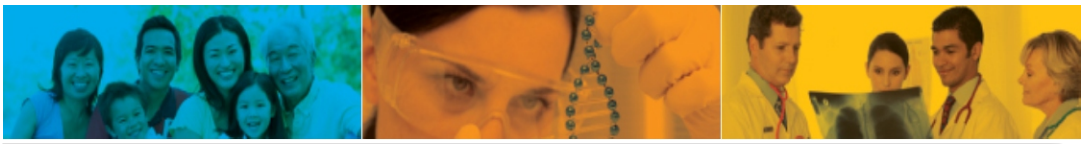


Clinical Research Newsletter Volume - 5, May 2014

LAMBDA

CONTENTS

1. GLOBAL NEWS **2**

1.1. Pfizer may push ahead with second approach for AstraZeneca's deal 2

1.2. Novozymes to open new research and development center in US 2

2. DOMESTIC NEWS **2**

2.1. FDC manufacturers to present their case before DCGI on safety and efficacy 2

2.2. Sun Pharma to takeover Ranbaxy for US$ 4 billion 2

3. REGULATORY NEWS **2**

3.1. Europe approves clinical trial transparency law 2

3.2. FDA releases bioequivalence guidance for 26 generics 3

4. DRUGS APPROVALS AND LAUNCHES **3**

4.1. Novartis Announced FDA Approval of Xolair omalizumab 3

4.2. Otsuka's Samsca Approved in Japan as the World's First Drug Therapy for ADPKD 3

4.3. USFDA approves Lilly's Cyramza for stomach cancer 3

4.4. Mylan launches first generic transdermal contraceptive patch 3

4.5. Roche's HPV test gets FDA approval for primary cervical cancer screen 4

5. DRUGS IN DEVELOPMENT AND CLINICAL TRIALS **4**

5.1. Glenmark's novel molecule for chronic inflammatory diseases enters human trials 4

5.2. TB Alliance says new tuberculosis drug regimen will move to Phase 3 clinical trial 4

6. MERGER, ACQUISITIONS AND SETTLEMENTS **4**

6.1. Charles River acquires Galapagos' CRO services division 4

6.2. Mallinckrodt acquires Questcor for $5.6 billion 5

6.3. Novartis buys GSK's cancer drugs for $16 bn in three-part deal 5

7. PATENT (NEW APPROVAL/ LITIGATION/SETTLEMENTS) **5**

7.1. It's a big win for Eli Lilly in multibillion-dollar Alimta patent fight 5

7.2. Teva Settles Patent Litigation with Pfizer on Celebrex 5

8. TECHNOLOGY NEWS **6**

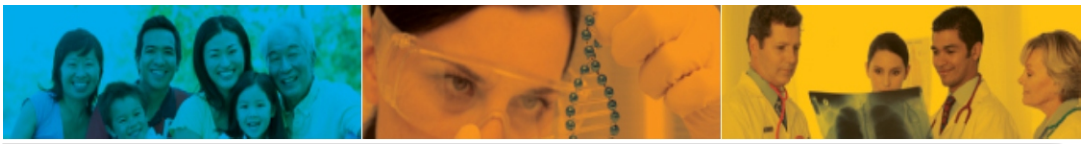
8.1. GE Healthcare's Revolution CT receives US FDA clearance 6

8.2. Imaging technique maps transdermal drug migration 6

Contact Us

Dr. Mrinal Kammili, Director Global Head - BD
mrinal@lambda-cro.com

Dr. Manish Sharma, AVP, Medical Affairs
manishsharma@lambda-cro.com



LAMBDA

GLOBAL NEWS

1.1. Pfizer may push ahead with second approach for AstraZeneca's deal Apr 23, 2014

- Pfizer may push ahead with a second approach for AstraZeneca's takeover as AstraZeneca has reportedly turned down a £60bn ($101bn) bid from the company.
- Pfizer may come back to bid for AstraZeneca as the company is looking to develop its cancer franchise. According to industry analysts, Pfizer hopes that AstraZeneca's acquisition could generate significant cost savings in addition to adding promising immunotherapies.
- In 2009, Pfizer has acquired Wyeth, a US-based a pharmaceutical company, for $68bn.

1.2. Novozymes to open new research and development center in US Apr 28, 2014

- Novozymes has announced the establishment of a new research and development center in the US dedicated to its bioagriculture business. The center will be located near the Research Triangle Park in Cary, North Carolina where the company will invest $36 million over the next three years.

DOMESTIC NEWS

2.1. FDC manufacturers to present their case before DCGI on safety and efficacy Apr 01, 2014

- The manufacturers of fixed dose combinations (FDCs), which were not cleared by the office of DCGI, will be given an opportunity to present their case with all possible justifications before the DCGI as part of proving the safety and efficacy of the FDCs, even as the expert panels have reportedly begun the exercise of examining the applications.

2.2. Sun Pharma to takeover Ranbaxy for US$ 4 billion Apr 07, 2014

- Sun Pharmaceutical Industries has entered into definitive agreement to acquire 100 per cent stake in Ranbaxy Laboratories for a total consideration of US$ 4 billion in an all-stock transaction.
- The combination of Sun Pharma and Ranbaxy creates the fifth-largest specialty generics company in the world and the largest pharmaceutical company in India. The combined entity will have operations in 65 countries, 47 manufacturing facilities across 5 continents, and a significant platform of specialty and generic products marketed globally, including 629 ANDAs.

REGULATORY NEWS

3.1. Europe approves clinical trial transparency law Apr 07, 2014

- Pharmaceutical companies and academic researchers will have to post the results of all their European clinical trials in a publicly-accessible database, under a draft law already informally agreed with E.U. ministers and passed by Parliament. The law also facilitates cross-border cooperation to make clinical trials larger, more viable and more reliable, which should in turn boost efforts to develop special treatments (e.g. for rare diseases).

3.2. FDA releases bioequivalence guidance for 26 generics — Apr 02, 2014

- The draft guidance documents cover generics of Merck's high cholesterol treatment Lipruzet (atorvastatin, ezetimibe), Pfizer's cancer drug Inlyta (axitinib), Reckitt Benckiser's opiod addiction treatment Suboxone (buprenorphine, naloxone), Purdue's painkiller Butrans (buprenorphine), Lundbeck's epilepsy treatment Onfi (clobazam) and Bayer's intrauterine contraceptive Mirena (levonorgestrel) and those guidances are still in draft form. FDA also said it had finalized 16 other BE guidances.

DRUG APPROVALS AND LAUNCHES

4.1. Novartis Announced FDA Approval of Xolair omalizumab — Apr 07, 2014

- Novartis announced that the USFDA approved Xolair (omalizumab) for the treatment of chronic idiopathic urticaria (CIU), a form of chronic hives. The new use is for patients 12 years of age and older who remain symptomatic despite treatment with H (1)-antihistamine therapy.
- Xolair is not used to treat other forms of urticaria (hives) and is not for use in children less than 12 years of age. Xolair is jointly developed by Genentech and Novartis Pharma AG.

4.2. Otsuka's Samsca Approved in Japan as the World's First Therapy for ADPKD — Apr 07, 2014

- Otsuka Pharmaceutical Co., Ltd. announced it has become the first company in the world to obtain regulatory approval for a pharmacological treatment of autosomal dominant polycystic kidney disease (ADPKD). Samsca (generic name: tolvaptan) has been approved in Japan in 7.5 mg and 15 mg tablet forms for extended use for the additional indication of ADPKD. Also, the new dosage form of 30 mg Samsca tablets has received approval for the indication of ADPKD.

4.3. USFDA approves Lilly's Cyramza for stomach cancer — Apr 21, 2014

- Eli Lilly and Company announced that the USFDA has approved Cyramza (ramucirumab) as a single-agent treatment for patients with advanced or metastatic gastric cancer or gastroesophageal junction (GEJ) adenocarcinoma with disease progression on or after prior fluoropyrimidine- or platinum-containing chemotherapy. With this approval, Cyramza becomes the first FDA-approved treatment for patients in this setting. Cyramza was also granted orphan product designation because it is intended to treat a rare disease or condition.

4.4. Mylan launches first generic transdermal contraceptive patch — Apr 23, 2014

- Mylan Pharmaceutical's Xulane is the first generic contraceptive transdermal patch to hit the market, marking another milestone for the delivery technology. Xulane is a generic version of Johnson & Johnson and Janssen Pharmaceuticals' Ortho Evra (norelgestromin/ethinyl estradiol transdermal system). The FDA approved the product's ANDA on April 16, and the company announced the launch subsequently. Mylan's website says it was the first to receive approval for three other transdermal systems for the treatment of angina pectoris, symptoms associated with menopause and chronic pain.

4.5. Roche's HPV test gets FDA approval for primary cervical cancer screen Apr 25, 2014

- Roche has won FDA approval for its HPV test used for primary screening of cervical cancer. The regulatory nod is expected to increase the company's profile in the U.S. and grow its 20% share of the global diagnostics markets.
- The Cobas test is the first FDA-approved frontline HPV DNA test for women of age 25 and older that can be used by itself to assess whether a patient needs additional diagnostic testing for the cancer.

DRUGS IN DEVELOPMENT AND CLINICAL TRIALS

5.1. Glenmark's novel molecule for chronic inflammatory diseases enters human trials Apr 03, 2014

- Glenmark Pharmaceuticals' NCE 'GRC 27864', which targets Microsomal Prostaglandin E synthase-1 (mPGES-1) as a novel therapeutic target in pain management is entering human trials. GRC 27864 is a potent, selective, and orally bioavailable inhibitor of mPGES-1, an enzyme which is up-regulated under inflammatory conditions.
- The company informed that they have completed preclinical studies and phase 1 enabling GLP studies for its selected lead molecule, GRC 27864 and has filed a phase 1 application for first-in-human trial with the MHRA, UK. Following this, Glenmark will also be initiating a proof of concept study in patients with acute pain.

5.2. TB Alliance says new tuberculosis drug regimen will move to Phase 3 clinical trial Apr 28, 2014

- Based on positive results from earlier clinical studies, TB Alliance is advancing the first-ever drug regimen designed to treat both drug-sensitive and some forms of multi-drug resistant tuberculosis (TB) to a global Phase 3 clinical trial.
- The announcement by Bill Gates, co-chair of the Bill & Melinda Gates Foundation, accompanied a commitment of significant funding by the Gates Foundation to determine the safety and efficacy of the new drug regimen, which is known as PaMZ.

MERGER, ACQUISITIONS AND SETTLEMENTS

6.1. Charles River acquires Galapagos' CRO services division Apr 01, 2014

- Charles River Laboratories International (CRL) has completed the previously announced acquisition of the CRO services division of Galapagos (GLPGF), which includes both Argenta and BioFocus. The acquisition positions Charles River as a full service, early-stage contract research organization (CRO), with integrated in vitro and in vivo capabilities from target discovery through preclinical development.
- Argenta and BioFocus are global leaders in integrated drug discovery services, with a predominant focus on in vitro capabilities.

6.2. Mallinckrodt acquires Questcor for $5.6 billion Apr 07, 2014

- Mallinckrodt announced that it has entered into a definitive merger agreement with Questcor Pharmaceuticals, a high-growth biopharmaceutical company, in a transaction valued at about $5.6 billion. The deal follows a February announcement that Mallinckrodt agreed to buy Cadence Pharmaceuticals, which makes a pain management drug for hospital settings among other products, for $1.3 billion, as part of its goal to be among the top 25% of specialty drug manufacturers.

6.3. Novartis buys GSK's cancer drugs for $16 bn in three-part deal Apr 22, 2014

- Global pharma major Novartis will acquire GlaxoSmithKline Plc's (GSK) cancer drugs portfolio for $16 billion and sell its vaccines business in return for $7.1 billion, apart from forming a joint venture for the consumer healthcare business in a three-part transaction.
- In separate statements, the two companies said they will combine Novartis' over-the-counter (OTC)) division with GSK's consumer business, creating a new world-leading consumer healthcare business with $10 billion in annual sales.

PATENT (NEW APPROVAL/ LITIGATION/SETTLEMENTS)

7.1. It's a big win for Eli Lilly in multibillion-dollar Alimta patent fight Apr 01, 2014

- Eli Lilly just scored billions in additional sales. A federal judge decreed that an unusual patent on Lilly's cancer drug Alimta is valid and that means the company keeps its Alimta exclusivity till 2022. At more than $2.7 billion in 2013 sales, about $1.2 billion in the U.S., 5 extra years of exclusivity promise a big boost at a crucial time.
- Israel-based Teva Pharmaceutical Industries had tried to buck that 2022 patent, which covers Alimta's use in combination with two B vitamins. Without those supplements, Alimta (pemetrexed) can cause potentially fatal side effects, so figuring out a remedy was important for the company and not an easy task, Lilly contends. Teva, however, maintains that adding B vitamins to the Alimta regimen was simply a logical conclusion.

7.2. Teva Settles Patent Litigation with Pfizer on Celebrex Apr 17, 2014

- Teva Pharmaceutical Industries Ltd. announced that its subsidiary Teva Pharmaceuticals USA, Inc. has entered into a settlement with Pfizer related to Teva's generic version of Celebrex (celecoxib) 50, 100, 200 and 400 mg capsules in the United States.
- Under the terms of the settlement, Teva may launch its generic versions in December, 2014, or earlier under certain circumstances. Teva has received tentative approval from the US FDA for all strengths and believes that it is first-to-file on at least the 100, 200 and 400 mg capsules. Sales of Celebrex were $2.2 billion in the U.S. according to IMS data as of December, 2013.

TECHNOLOGY NEWS

8.1. GE Healthcare's Revolution CT receives US FDA clearance

Apr 16, 2014

- The US FDA has granted 510(k) clearance to GE Healthcare's Revolution CT, which will enable physicians to diagnose even the most challenging patients. This innovative technology provides uncompromised image quality and clinical capabilities through the convergence of coverage, spatial resolution and temporal resolution all in one CT scanner.
- This will be the first CT scanner that's right for physicians in every clinical specialty and provides answers from one CT exam. Revolution CT is able to scan even the most challenging patients, day in and day out, with remarkably clear images. It can also scan pediatric patients at very low doses. And, we made sure that using it is productive, logical, and intuitive.

8.2. Imaging technique maps transdermal drug migration

Apr 25, 2014

- A team of chemistry professors at Stanford University has developed a method to monitor chemicals as they enter the skin, giving them a better idea of how fast and by which pathways the small molecules permeate the surface. The desorption electrospray ionization-mass spectrometry (DESI-MS) technique they used has been implemented in the past to image tumor surfaces and can be used without radioactive labeling that could affect the absorption of the chemicals. The chemists sprayed droplets of the drugs, including lidocaine, with an electric charge at the skin surface and tracked them to a depth of 1.2 millimeters.