NEWSLETTER MAY 2009

OSLO BIO UPDATE

A newsletter from Oslo Teknopol covering activities in the life science cluster in the Oslo region

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OSLO BIOTECH STOCKS
WEATHER THE STORM

Despite the credit crunch, biotech stocks on the Oslo stock market have performed surprisingly well. Algeta has led the way following a successful fundraising at 1,7 USD at the turn of year and by the beginning of May they had more than doubled to 3,6 USD. Other rises included Clavis up 11.1%, Biotech Pharmacon +69%, and PhotoCure +49.1% .

According to Jonas Einarson, chairman of OCC, this both reflects the growing strength of the sector as more and more Norwegian companies bring products into clinic, and the confidence spread by the Norwegian government's swift action in January to create an economic rescue package. "The Norwegian Biotech sector still has a challenge to survive the ongoing financial crisis. But these companies are funded on strong technologies that will be developed into tomorrow's new cancer drugs and diagnostics and oncology is the fastest growing sector in the pharmaceutical business."

Photo: Norwegian Polar Institute

NEUROSCIENCE NETWORK LAUNCHED

The famous Norwegian explorer, humanitarian and diplomat Fridtjof Nansen (1861-1930) also pioneered routes to the mind and is the inspiration behind the new Nansen Neuroscience Network exhibiting at BIO2009 in Atlanta.

Read more on page 3.

Photo: Johns Hopkins, Malaria Research Institute

Peter Agre, President of AAAS, Nobel Prize for Chemistry, 2003.

A MODEST MASTER

Peter Agre is the President of the American Association for the Advancement for Science (AAAS) and currently heads up the Malaria Research Institute at Johns Hopkins University in Baltimore, Maryland. He was awarded a Nobel Prize for his discovery of aquaporins, the long sought after water channel proteins, in 1991. His discovery, as well as his Norwegian heritage, has led him into a longstanding collaboration with aquaporins researchers at Oslo's centre for excellence in neuroscience.

Modesty, according to Peter Agre, is the characteristic that best defines the Norwegians. And in talking to the recipient of the 2003 Nobel Prize for Chemistry, it quickly becomes apparent that it is a trait he has inherited from his Scandinavian ancestors. He hastens to explain that his Nobel Prize-winning research was serendipitous – he stumbled upon the water channel proteins by accident whilst trying to purify blood group antigens – and lavishes praise on the work of others, not least his colleagues at the University of Oslo's Centre for Molecular Biology and Neuroscience (CMBN).

"I've just turned 60 and over the last several years, I've intentionally downsized my own laboratory to a very tiny group, but I've gotten involved in many national efforts. I've interacted closely with the University of Oslo group and they've got a dynamite team," he says. "Ole Petter Ottersen, the group leader, has now just been elected rector of University of Oslo, so his younger scientists will have to step up in increasingly prominent leadership roles, but they're very good."

Among those he admires he lists Erlend Nagelhus and Mahmood Amiry-Moghaddam – both outstanding neuroscientists who have pioneered the pinpoint localisation of aquaporins in the brain, identifying their role in the prevention of epileptic seizures and brain damage after injury. "Of course, this is basic research, but their accomplishments are astonishingly important. Norway should continue to invest and to look for the human consequences of water transport in brain. And I think they are world leaders in this area," he says.

NANSEN NEUROSCIENCE NETWORK LAUNCHED

Following the success of Oslo Cancer Cluster, a new network based on another area Norway can justifiably claim world class advances is making its US debut at BIO2009. The Nansen Neuroscience Network will seek partnerships that can benefit from its strengths in:

Brain physiology –research on aging and DNA-repair, glutamate excitotoxicity and aquaporines at CMBN·

In vivo neuroimaging –- "translational R&D" in the crossroads between academia, industry and hospital in Trondheim

Biobanks and biomarkers – opportunities with the Cohort of Norway and HUNT Biosciences

Memory and cognitive functions – frontline research at The Kavli Inst for Systems Neuroscience

Preventive medicine – marine lipids and other supplements

Key founder members include CMBN (Oslo) MI Lab, Trondheim and Innovation Norway

Of course, Agre's chance discovery provides the very foundation on which their work has been built. But by his own admission, he was not aware of the wide ranging significance of his findings for a long time. "When we figured out it was the water transport molecule, I was surprised how much interest this provoked among other scientists," he recalls. "But the work developed, and the consequences became better understood - the importance of water channels and water transport in brain and secretory glands, and kidney function, and airways. People started to comment that this could be the Nobel Prize, but I chose to delay any celebrations until it was evident that this had happened. I was like the naive farm boy, probably not dissimilar to the Norwegian farmers who came to the United States 100 years ago to work the land – you do your job and try to take care of things and don't get too boastful about it."

Agre views Norway's success in neuroscience as a continuation of the work of one of Norway's most renowned citizens – 19th century Arctic explorer and scientist, Fridtjof Nansen, who carried out pioneering work on nerve cells. "While Nansen may not register in the stratosphere with Bono and Madonna and people like that, I think that among scientific people he registers very high," he says. "I have the awe of a young person watching an outstanding programme and enjoying it greatly, by curiosity but also as a colleague."

In his role as a "cheerleader" for science, Agre tries to encourage young people to see science the way he thinks Nansen did - as an adventure. Whilst in his own country, this continues to be something of a thankless task, as numbers pursuing careers in science fall year on year, he believes Norway has a great advantage in this respect. Having recently attended the CMBN conference in Hafjell, he has been impressed by the many young Norwegian scientists who he saw present excellent work. Of course, he adds, being Norwegians, they tend to be a little shy.

Having once toyed with idea of running for the Senate himself, Agre is also keen to encourage more scientists to go into politics. "I think that we're going to see more and more from the Scandinavians – the Norwegians, and the Swedes to some extent – in international diplomacy. It's not surprising to me that the big climate meeting will be in Copenhagen in December. Again, the world's eyes will be on Scandinavia and the Norwegians will play a role, definitely."

BIO 2009 BUSINESS NEWS

NORDIAG LAUNCHES AN ARROW

NorDiag will be spotlighting its new automated DNA isolation desktop instrument - the NorDiag Arrow at BIO2009. In addition to blood, urine, tissue and sputum, the Arrow has an isolation procedure for DNA from stool samples available, and is particularly well suited for DNA isolation upfront of colorectal cancer screening. NorDiag is looking for partners where the stool and urine preps and possibly NorDiag's colorectal cancer marker can be used for colorectal cancer screening.
For more information visit ***www.nordiag.com***

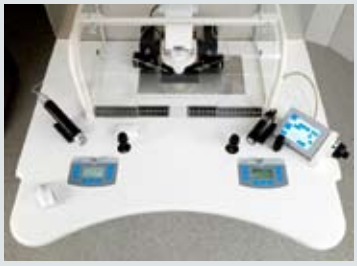
AFFITECH MERGES WITH PHARMEXA TO FORM NEW ANTIBODY POWERHOUSE

In May Affitech AS merged with Danish company Pharmexa to form a new antibody powerhouse. The new company will develop a primarily oncology-focused clinical pipeline fuelled by both own discoveries and in-licenced candidates. Achim Kaufhold will be CEO, with current Affitech CEO Martin Welschof becoming CSO. The merger also gives Affitech a listing on the Copenhagen Stock Exchange.
For more information visit ***www.affitech.com***

PCI BIOTECH-LED CONSORTIUM AWARDED USD 1.5 M EUROSTARS GRANT FOR SIRNA ONCOLOGY

A PCI Biotech-led consortium focused on effective siRNA cancer drug delivery has been ranked 3rd out of more than 300 European projects and will receive € 1.1 million in funding from the EU Eurostars Programme. The consortium comprises three companies PCI Biotech, SpectraCure and siRNAsense. Read more at ***www.pci-biotech.com*** and ***www.sirnasense.com***

CELLCURA UNVEILS IVF WORKSTATION



With studies showing that controlled environments improve IVF success rates, Norwegian specialist CellCura has developed an intelligent modular workstation. The CellCura workstation controls and monitors the work environment for cell handling, allows quick and accurate morphological assessment of reproductive cells and provides intuitive track and trace for procedures and utensils used. ***www.cellcura.com***

HUNT APPOINTS FOSS

HUNT Biosciences has appointed former GE Healthcare director Per Foss as its new CEO. For both pharmaceutical and biotech companies, HUNT Biosciences is ideally positioned to devise biomarker strategies across a wide range of key disease areas such as type II diabetes, osteoporosis, cancer. Visit ***www.huntbiosciences.com***

OPTINOSE PRESENTS NEW CHRONIC RHINOSINUSITS TREATMENT DATA

OptiNose has announced important new results from a Phase II trial of its novel nasal drug delivery device with fluticasone for the treatment of chronic rhinosinusitis. Patients in the active treatment group experienced significant improvements in nasal symptoms, nasal discomfort and sense of smell. For more information visit ***www.optinose.no***

RAPIDLY EXPANDING CLUSTER

Oslo Cancer Cluster is rapidly expanding, not only in Norway but also abroad. Since December 2008 14 new members have joined the Cluster. Among the new members are big pharmas such as Abbott, Bayer HealthCare, Sanofi-Aventis and Novartis Oncology. Swedish companies Stricent AB and Immunicum AB has also joined in, as well as small Norwegian biotechnology companies including BerGenBio, NordicImagingLab and Hunt Biosciences. Bjarte Reve, the CEO of Oslo Cancer Cluster, is pleased with the expanding cluster:

"I take this as an acknowledgement that Oslo Cancer Cluster is a driving force within cancer R&D, and that the Cluster is also attractive as a networking arena for companies outside Norway. More members mean that we may develop more new treatments and diagnostics in cancer faster than today. This is more and more important due to cancer incidence being on the rise all over the world."

Photo: Linda Cartridge

Bjarte Reve has two missions - creating a European translational oncology network and fighting cancer in Africa.

WHO CANCER FACTS:

- Cancer is a leading cause of death worldwide: it accounted for 7.9 million deaths, around 13% of all deaths, in 2007
- Lung, stomach, liver, colon and breast cancer cause the most cancer deaths each year
- About 30% of cancer deaths can be prevented
- Tobacco use is the single most important risk factor for cancer
- Cancer arises from a change in one single cell. The change may be started by external agents and inherited genetic factors
- About 72% of all cancer deaths in 2007 occurred in low- and middle- income countries
- Deaths from cancer worldwide are projected to continue rising, with an estimated 12 million deaths in 2030

"YOUNG GLOBAL LEADER"

REVE TO PROMOTE CANCER TREATMENT IN AFRICA

Oslo Cancer Cluster CEO Bjarte Reve (36) is one of 200 Young Global Leaders appointed by the World Economic Forum in 2009. Reve intends to use his nomination to promote the development of better cancer diagnostics and treatments in the Third World.

"It is an honour to be selected as one of this year's Young Global Leaders. I would like to use the opportunity this global network gives me to work for faster development of cancer treatment on a world scale. Also I will push forward improved cancer diagnostics and treatments in the Third World," says Reve.

NEW CANCER NETWORK INITIATIVE PROPOSED

The World Health Organization (WHO) estimates that in the poorest parts of the world less than 50 per cent of cancer victims have access to proper treatment.

"World Economic Forum already works for better access to treatment of HIV/AIDS, malaria and tuberculosis. However, a cancer initiative is long overdue since cancer kills more people on a yearly basis than these three diseases combined," says Reve.

Reve proposes to establish a cancer network initiative named *"From Cancer research to Cure"*, as a public-private cooperation.

"By making health authorities, researchers, pharmaceutical companies, biotech companies and patient organizations work more closely together, we can develop new cancer treatments faster and more cost effective than today," says Reve.

Photo: istocphoto

Oslo Cancer Cluster, the World Economic Forum and Afrox are joining forces to fight cancer in Africa.

CEO Erik Christensen believes DiaGenic's tests will have a major impact in neurogenerative disease and oncology treatment and prevention.

DiaGenic's PDtect and BCtect tests use easy to collect peripheral blood as their sample material.

Photo: Diagenic

DIAGENIC
TAKING GENE EXPRESSION TESTING MAINSTREAM

The development of microarray technology has raised expectations for a new generation of both predictive and diagnostic tests able to measure complex combinations of biochemical and genetic markers. However, whilst microarrays are widely used experimentally in research, few companies have been able to pass the more exacting thresholds that need to be met for routine use. That is why the news that Oslo-based DiaGenic is about to receive CE-marking for its gene-expression based Alzheimer's ADtect® and Breast Cancer BCtect® tests is creating such excitement. DiaGenic CEO Dr Erik Christensen explains more:

Is it true that DiaGenic's origins can be traced back to plant research?
Yes, the company was founded in 1998 by Anders Lönneborg and Praveen Sharma who were researchers at the Norwegian Forestry Institute. They noticed secondary responses to disease in tree leaves in for example the leaves and roots. This led them to speculate that the same thing could be happening in humans and could form the basis of an early diagnostic test. Further research showed that such disease "signatures" which are caused by changes in RNA expression can be discovered and measured.

What is the business idea?
DiaGenic has decided to use this concept to develop mainstream diagnostic tests for particularly devastating diseases where it would be difficult if not impossible to collect sample material from the patient and where early diagnosis can lead to successful intervention with either surgery or therapeutics. Thus our three lead projects are Alzheimer's, Breast Cancer and Parkinson's and we use peripheral blood as the sample material.

How do the tests work?
We compare changes in RNA isolated from peripheral blood samples with our known disease "signature." This gives a yes/no diagnostic answer. Currently we use the Applied Biosystems Taqman as the technical platform.

Progress so far?
Obviously this is new territory and has required substantial investment in research and development. To gain access to the necessary funds, DiaGenic was listed on the Oslo Stock Exchange and has completed several successful funding rounds since then. We have also received significant funding from the Norwegian Research Council and other sources.

We have now completed trials and launched our breast cancer test BCtect® in India last December. This was because India is a market with a major unmet need due to the limited availability of mammography. Now we are expecting imminent CE marking for both BCtect® and PDtect® .

The future?
In addition to routine testing we have also been approached by pharmaceutical companies who see the potential for our tests to help identify patients suitable for clinical trials of new drugs. This is particularly pressing in the case of Alzheimer's. DiaGenic is now developing a test that can not only identify patients with MCI (Mild Cognitive Impairment) a pre-dementia stage but also the 50% that actually will develop Alzheimer's.

More information at ***www.diagenic.com***

Photo: MI Lab

The MI Lab in Trondheim uses state-of-the-art neuroimaging systems, building on a tradition stretching back to the 1960s when some of the first techniques and systems were developed by Nycomed(Amersham), now GE.

MI LAB PIONEERS A MORE
INTELLIGENT APPROACH TO NEUROIMAGING

Along with the CMBN in Oslo, the other main axis of the new Nansen Neuroscience Network is the MI Lab in Trondheim. A Norwegian Centre for Research Based Innovation, the overall goal of MI Lab is to facilitate cost efficient health care and improved patient outcomes through innovation in medical imaging, and to exploit such innovations to create industrial enterprises in Norway. Neuroimaging has emerged as one of the key areas of expertise.

According to Director Olav Haraldseth MR and ultrasound have emerged as the two main modalities for medical imaging in future healthcare: The main reason being their ability to image soft tissue, blood flow, organ function and physiology. Both are promising for the new fields of functional and molecular imaging and they also share the benefit of not using ionising radiation. A unique advantage of MRI is the superior quality of the anatomical information. New advanced MR methods also provide diagnostic information about organ function, physiology, metabolism and molecular activity. Often referred to as the 'new stethoscope', ultrasound has the unique advantages of real time imaging, portability of the equipment, and low cost."

Under Haraldseth's guidance, the MI Lab currently runs the following four-pronged research plan:

1. Ultrasound technology innovation – research in medical ultrasound in Trondheim started over 30 years ago, with the development of ultrasound Doppler blood flow equipment. There is an ongoing research activity on hardware and software for ultrasound imaging that in the coming years will significantly improve all aspects of image quality in ultrasound and MI Lab wants to be a major player in this activity.

2. Medical imaging applications for non-expert users focusing on diseases with potential for improved quality of life in large patient groups (heart failure, dementia / memory impairment, osteoporosis).

3. Image-guided minimally invasive surgery looking to integrate pre, intra, and postoperative procedures particularly in neurosurgery and cardiovascular surgery.

4. Image-based information to support better medical decision making in and some of the ongoing clinical projects focus on
- breast, prostate and brain cancer
- early foetal development
- guidance of stem cell therapy

"In all these areas we look forward to extending collaborations through the Nansen Network," announces Haraldseth.

For more information see ***www.ntnu.no/milab***

EVENT CALENDAR 2009

Meet representatives from the Oslo life science sector at the following events:

MAY

18 – 21 Scandinavia Pavilion at Bio International Convention 2009, Atlanta,USA
www.bio2009.org

JUNE

24 – 26 pHealth 2009 in Oslo, Norway
www.phealth2009.com

SEPTEMBER

3 – 4 ECCP, European Cancer Cluster Partnering, Toulouse, France
www.eccp2009.com

CREATING THE BEST TECHNOLOGY FOR HEALTH!

Oslo is host for the 6th international workshop on Wearable Micro and Nanosystems for Personalised Health in June.

www.phealth2009.com

Highlights from the programme:

TWO SPECTACULAR TECHNOLOGY DEMONSTRATION EVENTS:

Personalized health at the hospital - a visit to HP European Health Centre of Excellence in Oslo. In this centre, large companies comes together to cooperate to create advanced technology for health. HP, Imatis, Cisco, Telenor and Microsoft present and demonstrate the technology-solutions for the digital hospital.

In-vivo biomedical sensors in surgery - a spectacular demo transmitting live form the operating theatre demonstrating how biomedical sensors are used to support the doctor during advanced surgery.

SOME OF THE SPEAKERS AT THE WORKSHOP:

- **Roberto Giampieretti**, European Commission - eHealth: Empowering citizens through pHealth - the European agenda
- **COL Karl Friedl**, Telemedicine and Advanced Technology Research Centre: Digital Soldiers: Transforming Personalized Health in Challenging and Changing Environments
- **Stefan Ohlsson**, IBM: IBM + Google - a collaboration to empower the patients and personal health records.
- **Professor Brian MacCraith**, Biomedical Diagnostics Institute
- **Dr. Josep Roca**, Hospital Clinic Barcelona
- **Baldur Johnsen**, Hewlett Packard

This 2009 pHealth workshop focus how to face the health care needs in the near future. More than 40 posters and 10 demos presenting the cutting edge of European research are also part of the programme!

Welcome to pHealth 2009 in Oslo, Norway, June 24-26!

ONE TO WATCH

BERGENBIO

RNA continues to be one of the hottest topics in drug discovery and a mini-cluster of companies is appearing in Norway. Following PCI-Biotech and siRNAsense, the latest entrant is BerGenBio.

COMPANY MISSION

BerGenBioAS offers fee-for-service and joint ventures in drug target discovery and drug target development, using CellSelectRNAi, CellSelectImaging and CellSelectScreening technologies. By screening large numbers of candidates, CellSelectRNAi identifies multiple RNA interference effectors against each target. These multiple hits are invaluable for controlling for off-target effects and provide an 'epi-allelic' series of RNAi effectors with varying strengths that can be used in dose-response experiments, e.g. to determine therapeutic thresholds. RNAi elements can also be introduced stably into primary or cultured cells of client's choice, labelled with their CellSelectImaging triple reporter. A selection of in vitro and in vivo models is offered, and cells can be imaged live for many weeks. CellSelectImaging labelled cells can also be re-isolated and cultured further.

BerGenBioAS also offer CellSelectScreening high-throughput screening services using client compounds or their proprietary whole genome and genome-subset RNAi libraries.

MANAGEMENT

Richard Godfrey (Chief Executive Officer)
James Lorens (VP Business Development)
David R Micklem (Chief Scientific Officer)
Tone Sandal (VP Research Services)

COLLABORATIONS

University of Bergen

INVESTORS

SARSIA Preseed
University of Bergen
UNIFOB AS
Founders and management

WEBSITE

www.bergenbio.com

Oslo Teknopol

– your key to the Oslo region

Oslo Teknopol aims to stimulate innovation and attract foreign investments and talent to Norway's capital region. We offer free assistance and information about business conditions and opportunities within life sciences and other key knowledge-based clusters in the Oslo region:

- Maritime
- Energy and environmental technology
- Information and communication technology
- Life science
- Culture

Oslo Teknopol is a non-profit regional development agency, established by the City of Oslo and Akershus County Council.

OSLO BIO

Oslo Bio is a collaborative network of stakeholders from the life science cluster. Oslo Bio aims to strengthen the cluster and contribute to long term growth through marketing, initiating and facilitating development projects, and international collaboration. Oslo Teknopol act as the secretariat for Oslo Bio.

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