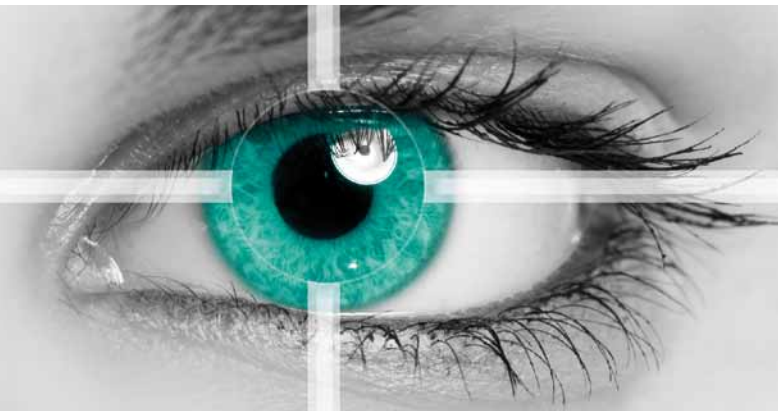
ISSUE 01/2015

PEPPERMINT
VENTURE PARTNERS

UPDATE °2

EDITORIAL

THE FUTURE OF VISION



A recently published study "Future of Vision: Forecasting the prevalence and cost of vision loss*", by NORC, an independant research organisation at the University of Chicago, indicates significant changes to the landscape of visual health driven mainly through demographic shifts.

The most critical aspect is the aging of the baby-boomer generation. NORC estimates that the current population with vision loss includes nearly 3.1 million impaired and almost 1.4 million blind in 2014. By 2032 NORC estimates that the visually impaired population aged 40 and older will increase 66% to nearly 5.1 million and the blind population will increase 59% to 2.2 million. By 2050, these numbers will more than double. The growth and shifts in vision loss and eye disease prevalence will result in growing costs from US$145 billion in 2014 to up to $376 billion by 2050.

With a natural interest in this subject, a network in ophthalmology, and a desire to answer the question "where does innovation come from?", we decided to make EYE DISEASES the focus of this UPDATE.

We are pleased to share with you the views of experts in this field on how to foster innovation, including, among others, Wendy Diller, a senior writer and analyst with Innovation in Medtech, and Alejandro Dussan, one of the managing directors of EYEFOCUS. Dr. Oliver Zeitz, Head of Global Clinical Development Ophthalmology at Bayer HealthCare, and Prof. Robert Weinreb, MD, Chairman & Distinguished Professor of Ophthalmology and Director of the Shiley Eye Center in San Diego, also provide their insights on the topic.

Our portfolio companies Caterna Vision and Implandata working in this area are recognized as front-runners and leaders in their field, having developed disruptive products for the diagnosis and treatment of eye diseases. As ophthalmology and eye diseases are one of our key focus areas, we are also sponsoring EYEFOCUS in Berlin, the first vertical healthcare accelerator specializing in this area.

We hope you enjoy reading our UPDATE 2.

The Peppermint VenturePartners-Team

**The Future of Vision: Forecasting the Prevalence and Costs of Vision Problems, NORC at University of Chicago, June 11, 2014*

IN THIS ISSUE

IN FOCUS

VENTURE CAPITALISTS FAVOR OPHTHALMOLOGY AND ORTHOPEDICS

The health of early-stage financing of device start-ups is a great concern in the industry. However, the actual amount of venture capital invested in device companies (all stages) has been relatively stable for the past six years.

Device VC funding has averaged about $2.5 billion per year over the past six years, with small fluctuations, after a large 28% drop in 2009 (from $3.6 billion in 2008), points out Jonathan Norris, a managing director at Silicon Valley Bank (SVB). The rub is that the percentage of dollars invested in medical devices compared to total venture capital invested is way down. And, while it is down for biotech as well, the drop off is not nearly as dramatic and the base is much bigger. Norris presented an update on the flow of venture capital into device companies at the Phoenix Conference in October and summarized some of the bank's findings in a recent interview with The MedTech Strategist.

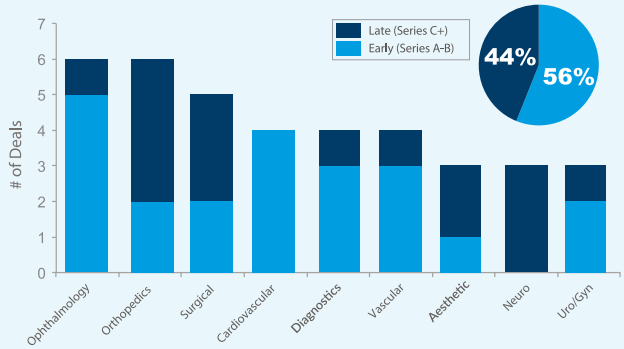
On the positive side, total dollars invested in devices seem to be on a slight upswing after a dip in 2013 and look on track to be modestly stronger in 2014, he points out. Furthermore, only those companies that raised $2 million or more in their Series A are captured in the SVB data pool, so the numbers do not reflect some companies funded by angels and individuals or other non-traditional sources.

That information may not be of much comfort to those who look enviously at the plethora of money pouring into biotech, a consequence of the sector's hot exits (see "Amid the Biotech Boom, a Fragile Medical Device IPO Window Opens," The Medtech Strategist, September 22, 2014). Device start-up investment continues to be about half that of biotech. While that proportion is in line with the ratio of company creations between the sectors, device valuations are much lower than biotech because the overall exit values are lower and capital is limited, Norris says. "The investors know what the exits look like, so they are pushing down valuations in order to get good returns, and there are more penalties for not participating in subsequent rounds."

ROBUST M&A ACTIVITIES

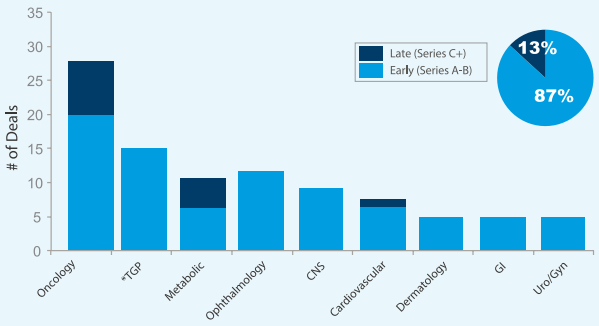
The robust biotech M&A activity and subsequent healthy exits are attracting new money to life science venture funds, although it is not clear how much the device sector will benefit.

Figure 1
TOP INDICATIONS FOR DEVICE VCs
2012-2013



Source: Silicon Valley Bank

Figure 2
NEW BIOPHARMA INVESTMENTS BY TOP INVESTORS
INDICATION AND STAGE



*Target Generating Platform
Source: Silicon Valley Bank

Some funds that traditionally allocate to both biotechs and devices seem to be veering more to biotech, but that evidence is anecdotal, he adds.

Clinical areas of most interest to device VCs in 2012 and 2013 were ophthalmology and orthopedics, followed by surgical (see Figure 1). SVB measured this based on new money going into start-ups centered on a particular disease area, including only those companies that had completed early-stage rounds of $2 million or more. However, in most cases, VC interest does not directly correlate to disease areas with the biggest exits.

Ophthalmology has enjoyed the highest average deal valuation over the past five years (through 2013) and saw the second biggest commitment of funds on a per-company basis ($76 million on average into three companies). Companies focused on that field took less time to get to exit from a Series A close than the sector average (6.4 years versus 7.7 years) and had average upfront multiples (5).

Orthopedics, on the other hand, was the second most funded indication, almost on par with ophthalmology. Yet, it had the lowest average deal valuation and a time to exit that was only average (7.2 years versus the average 7.7 years). Imaging and diagnostics had the longest time to exit (9.1 years) and the second lowest total average deal value ($193 million), yet, four start-ups were funded, about average for the device sector as a whole.

"Even though there were not a ton of exits in ophthalmology in recent years, there is a lot more activity in the sector. That is driven by science and by efforts to find alternatives to biopharma therapeutics that have side effects," Norris says.

VCs committed about 56% of their funding in new investments into early-stage companies involved in Series A and B rounds. That pales in comparison to pharma, however; nearly 90% of new money going into biopharma went to early-stage companies (see Figure 2). "Biotech has hugely swung to an interest in early-stage financings because the mezzanine guys are coming in and leading Series C and D rounds instead of the traditional VCs," Norris says. "That same phenomenon isn't happening on the device side, so device guys have to continue investing late in the development process."

"It is incumbent upon big players to realize that you can only grow so much geographically and that you need to embrace innovation. If they do not support early-stage innovation, opportunities down the road will be limited because they are shutting down the source of new technologies," Norris warns. "I would love for device companies to follow the plan biopharma went through over the last five years."

AUTHOR
Wendy Diller

Wendy Diller is a senior writer and analyst with Innovation in Medtech, publishers of The MedTech Strategist, and a long-time writer, editor and analyst on life sciences strategies.

This article originally appeared in The MedTech Strategist November 2014

IN FOCUS

BERLIN: EYEFOCUS – THE FIRST ACCELERATOR IN EUROPE FOCUSING EXCLUSIVELY ON EYE-CARE

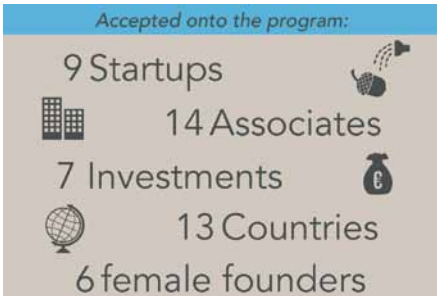
Unlike other healthcare accelerators, EYEFOCUS is the first hyper vertical accelerator to focus on eye-care. In creating it, we knew there was a risk of there being too few candidates, but at the same time we also knew that low sight, blindness and eye-related diseases are problems that are very relevant to many specialized institutions, companies, start-ups and eye doctors. We therefore decided to take the risk and just do it.

As sponsors we looked for strong, open-minded players that are not direct competitors but complement each other, who have the relevant knowhow and a strategic focus on eye-care. After several months of negotiations we received the support of Bayer Pharma AG, Zeiss AG and Peppermint Venture Partners. Both Zeiss and Peppermint have invested recently in eye-care start-ups.

It is now a reality – www.eyefocus.co, the world's first start-up accelerator focused on eye-care – has been launched. We have brought together the eye-care innovation ecosystem around an independent accelerator.

We have also gathered a group of mentors, who will support our start-ups. They bring together global expertise in ophthalmology and eye-care innovation, start-up development, and very strong international networks.

We will be investing in early stage companies that are innovat-



ing to solve problems relating to preventing, curing and living with eye-disease and blindness. An example of a great eye-care start-up is www.peekvision.org.

We will invest up to € 20,000 in these companies and provide a three-month accelerator program to help develop their businesses. The accelerator will be based on the industry standard, with intensive mentoring and valuable networking through the eye-care ecosystem, so that the startup founders can meet all the people they need to make their businesses work. However, being independent, we are flexible and can adapt the concept to fit the right start-ups.

The program started in mid February 2015 and will run until mid May 2015. It is based at Rainmaking Loft in Berlin, which is the heart of Berlin's start-up scene (http://rainmakingloft.com/berlin/welcome). Part of the program will also take place in London. EYEFOCUS has a strong social undercurrent – our aim is to create successful businesses that also change lives. There are 280 million people in the world with visual impairment and eye disease, 90% of whom are in poor countries. Of these, 80% of the cases are curable. We want to focus the disruptive innovation of start-ups on this challenge.

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EYEFOCUS
accelerator

WHAT WE ARE DOING:

1. Finding and accelerating around nine start-ups; they will benefit from investment, mentoring, a three-month program and networking.

2. Building the eye-care innovation ecosystem around the accelerator; partners and mentors will benefit from networking with each other, access to innovative start-ups, and access to innovation thinking and practices from the start-up sector.

3. Accelerating and de-risking start-ups for future investors and clients; angel and VC investors benefit from developed and well-networked start-ups.

www.eyefocus.co

www.facebook.com/eyefocusaccelerator

@eyefocustech

IN FOCUS

CONTINUOUS MONITORING OF INTRAOCULAR PRESSURE (IOP) TO REVOLUTIONIZE GLAUCOMA CARE

The availability of technology for 24-hour or continuous IOP monitoring will be a transformative event in the management of glaucoma. Within the next five years, the plethora of data generated from 24-hour or continuous IOP monitoring will provide deeper insight into glaucoma onset and progression, and lead to a paradigm change in patient care.

It is well known that a single measurement of IOP during usual office hours provides insufficient information to guide management decisions for patients with glaucoma. Although clinicians might maximize the value of in-office IOP evaluation by obtaining multiple measurements throughout the day, such measurements rarely include nocturnal IOP measurements. The ability to monitor 24-hour IOP, or even measure IOP on a continuous or regular basis automatically or through the patients, while sharing the data between the patient and the physician, is the key to personalizing IOP control for optimal glaucoma management. It will allow physicians to fully elucidate the importance of different IOP parameters on glaucoma progression.

The insufficiency of using a snapshot measurement of IOP to guide clinical decision-making in glaucoma is underscored by data highlighting the variability of IOP, both in terms of short-term and long-term fluctuations, along with the lack of knowledge about which IOP parameter (e.g., peak, 24-hour mean, or fluctuation during the day or a longer time period) has the greatest prognostic significance.

IOP-VARIATION STUDIES

Twenty years ago we established a sleep laboratory at the University of California, San Diego. Through studies involving more than 1,500 patients we developed insights into IOP circadian rhythm, effects of postural change, and the 24-hour IOP-lowering effects of the various classes of ocular hypotensive medications.

In the latter investigations, we found that beta-blockers and alpha-agonists were very effective in reducing IOP during the day, but had no IOP-lowering benefit at night. In contrast, prostaglandin analogues and carbonic anhydrase inhibitors were found to have good 24-hour, IOP-lowering activity, as did laser trabeculoplasty.

These findings are consistent with the mechanisms of action of the different classes of medication and the circadian rhythms of aqueous humor production and uveoscleral outflow. However, research has indicated the importance of perfusion pressure and translaminar pressure (the difference between intracranial pressure and IOP) as risk factors for glaucoma and its progression, and these may therefore be issues to consider in addition to IOP when selecting optimal medical therapy. We found that blood pressure and perfusion pressure at night are lowered by the beta-blockers, but not by the prostaglandin analogues or carbonic anhydrase inhibitors. In animal studies, some alpha-agonists have neuroprotective effects.

We will soon see that drugs with 24-hour, IOP-lowering efficacy, that do not lower perfusion pressure, are the preferred medication. However, additional effects, such as neuroprotection or the ability to enhance blood flow to the optic nerve, will be important. In fact, there is some clinical data that hints that the alpha-agonist brimonidine has neuroprotective effects and is more effective than timolol in preserving the visual field (LOGTS Study).

IOP-MONITORING TECHNOLOGY

The approaches to 24-hour IOP measurement are based on the use of either temporarily or permanently placed devices. A temporary modality (Triggerfish, Sensimed) is a con-

tact lens-based system that detects changes in corneal curvature rather than IOP. Implantable devices for monitoring IOP that provide the data via telemetry are being developed by Implandata Ophthalmic Products (CE mark trial ongoing) and AcuMEMS, as well as others still in pre-clinical testing.

Although the contact lens-based sensor has the advantage of being noninvasive, we believe that the permanent-monitoring approaches will be a better solution for obtaining accurate IOP measurements over long durations. The intraocular telemetric sensor of Implandata even allows wireless transfer of the IOP data to a handheld device connected to a web-based platform, providing the physician and the patient with access to the data and enabling the physician to monitor the therapy directly as far as IOP lowering is concerned. The preliminary clinical data from the ongoing trials look very promising. Once such data becomes available, we will be able to refine our concept of target IOP and establish whether it is the peak, mean, fluctuation or some other parameter that matters. More importantly, in the future, drug-delivery devices and surgical techniques will be integrated with these IOP-monitoring devices in ways that will optimize control of IOP.

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Chairman & Distinguished Professor of Ophthalmology
Director of the Shiley Eye Center
Director of the Hamilton Glaucoma Center

IN FOCUS

HOW BAYER HEALTHCARE RESPONDS TO CHALLENGES IN OPHTHALMOLOGY AND PUSHES FOR MEDICAL INNOVATION

Vision loss is devastating. According to recent surveys, patients would be willing to give up years of their remaining life if it meant they could have their vision back. While considerable progress has been made over the past decade, there is still a significant unmet medical need in ophthalmology.

Nearly 80 percent of blindness is avoidable. Some of the biggest challenges to reducing this percentage are an ageing population and an increase in the number of people living with diabetes as all of these patients are at increased risk for vision impairment. The implications for patients and societies as a result of these changing demographics are huge. We must continue to encourage the awareness of eye diseases and inspire ways to improve prevention and management. Any innovation in ophthalmology that can save or improve vision, translating into a better life for patients, would be an important achievement. This is a strong value proposition for the medical community and affected patients and makes ophthalmology an exciting place to be.

As a leader in ophthalmology, Bayer HealthCare takes an active role in pushing for innovation. We recognize the dynamic nature of ophthalmology and the close interaction between pharmacological therapies, devices and surgery. We believe this is where the future of ophthalmology lies and we will keep investing in this area. Through our internal R&D capabilities, we aim to develop advanced treatment options to address these unmet needs. But we can't achieve progress by ourselves. Combining expertise is integral to success, and as such we have established partnerships with a number of other innovators outside of our company. Sponsoring the EYEFOCUS accelerator is part of our ongoing global strategy, and we will continue to support their work in developing cutting-edge technologies and services in ophthalmology.

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CURRENT EQUITY POSITIONS IN OPHTHALMOLOGY

CATERNA VISION GMBH

The most recent investment in digital health by Peppermint Venture Partners (PVP) is the company Caterna Vision GmbH (CV). As lead investor, PVP took a stake in this Berlin/Dresden-based digital health company in April 2014.

CV has developed and launched the first reimbursed digital eye therapy in Germany. Caterna Vision Therapy (CVT) is the first mobile medical app in Germany that is prescribed to patients by physicians and is reimbursed by health insurance companies for the treatment of amblyopia (also known as lazy eye). Amblyopia is a common condition, which can affect up to 5% of the general population (in Germany, 150,000 people). The negative impact of amblyopia, from a population perspective, has been shown in several studies.

Amblyopia almost doubles the lifetime risk of visual impairment and this adds to the overall cost burden visual impairment has on society (see also the editorial). The standard treatment is occlusion, but data show that occlusion alone may not be sufficient to manage the disease. Furthermore, occlusion impacts on quality of life and can also result in stigmatization of the child. CVT improves the treatment alongside occlusion and may increase occlusion therapy adherence. CVT is an on-screen application and is ideal for use as an adjunct to occlusion treatment of amblyopia. During regular training sessions, the weak eye is stimulated by various therapeutic stimuli in the form of different patterns that are displayed on a computer screen.

These stimuli, originally developed by scientists from the University of Dresden, can be individually adapted for each patient. The CTV 90-day treatment starts in the medical practice. After diagnosis and consultation, the ophthalmologist determines the type, extent and duration for the child's vision exercises.

GAMES HELP

To help the child to enjoy the therapy, the therapeutic stimulus is combined with exciting games.Tricky tasks ensure that the child remains concentrated during training. After the initial phase at the medical practice, CVT therapy is then continued at home. For this purpose, an app with login data is provided, which allows access to the CVT program.

This means that the child can perform his/her daily eye exercises in familiar surroundings and the exercises become part of the daily routine of family life. CVT is performed under medical guidance. The ophthalmologist can always track progress of the treatment online because each exercise session is recorded automatically. As a telemedical program, CVT establishes close contact between the patient, parents of the patient, and the ophthalmologist, even at home. In addition, regular follow-up examinations are scheduled to monitor progress of the treatment.

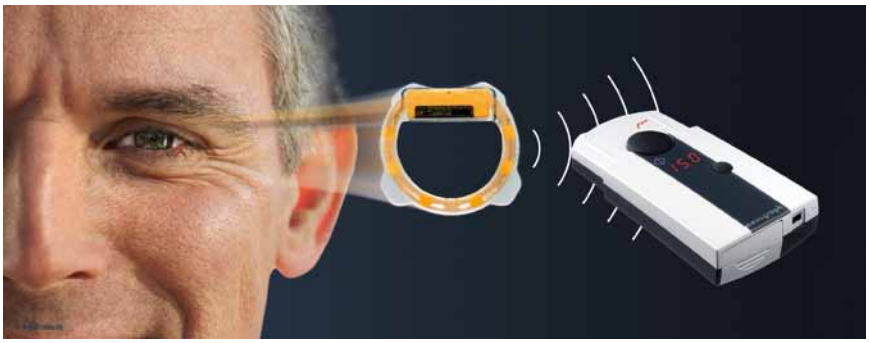
More than 400 children have been treated with CVT so far. Just recently, in addition to CTV, CV has launched its occlusion app, which makes it possible to track and monitor occlusion behavior by entering data such as when and how long the occlusion is applied. This is intended to empower the child and also the parents in relation to treatment behavior and to improve treatment adherence.

BARMER GEK, one of the largest German public health insurance companies (HICs), was the first HIC to reimburse the 90-day CTV treatment. Since then, other HICs have followed, including AXA, a well-known private HIC, and other public HICs. In addition to CTV, CV is developing new digital applications for eye diseases such as AMD (age-related macular degeneration), which are due to be launched in the next 18 months. CV plans to raise a B-round in 2015.

www.caterna.de

CURRENT EQUITY POSITIONS IN OPHTHALMOLOGY

IMPLANDATA OPHTHALMIC PRODUCTS GMBH



IOP
Implandata Ophthalmic Products GmbH

Another investment in ophthalmology in the PVP portfolio is Implandata Ophthalmic Products (IOP), in which PVP invested mid 2012 as lead investor of the A2 round.

IOP is the first company worldwide to have developed a wireless eye pressure sensor, EyeMate, to the clinical stage (15 patients carrying the sensor) which is capable of measuring intra-ocular eye pressure repeatedly or continuously. EyeMate transmits the intra-ocular eye pressure wirelessly to a small portable hand-held device of the patient, so that, for the first time, the recorded values can be integrated into a mobile patient management system. The physician and patient are linked to one another through an app. As a result, the physician can see whether the current treatment to lower the eye-pressure is working or requires adjustment.

IOP has developed two versions of EyeMate: (i) the intra-ocular version, which is implanted during cataract surgery through the same incision (CE trial running) or for patients where cataract surgery has been performed in the past (expanded CE marking study scheduled); (ii) the extra-ocular version, which can be implanted independently of other interventions (pre-clinic completed, first in man planned in 2016). Both versions will be embedded in a mobile environment, in which the patient and physician are connected, bringing together the stakeholders and empowering the patient.

DIFFERENT APPLICATIONS

Besides glaucoma itself, IOP is also evaluating certain applications in secondary glaucoma situations, such as keratoprothesis or penetrating keratoplasty patients. Keratoprosthesis is a surgical procedure where a diseased cornea with high risk of cornea transplant rejection is replaced with an artificial cornea. By contrast, keratoplasty patients tolerate the donor cornea. Elevated intra-ocular pressure (IOP) is a key issue for keratoprosthesis and keratoplasty patients. Approximately two thirds of these patients already have glaucoma pre-operatively and management of secondary glaucoma remains a major challenge post-operatively. Current IOP measurement methods cannot be applied in these cases.

They therefore represent a very real, unmet medical need. High intra-ocular eye pressure is a major reason why keratoprosthesis patients frequently experience visual field loss and eventually may go blind as a result of undetected and/or insufficiently controlled glaucoma. Glaucoma is the number one reason for irreversible blindness and, in general, the second-most frequent cause of blindness in the world. The frequency of glaucoma increases with age and has a prevalence of approximately 2-4 percent among people over 65. Increased internal pressure in the eye is the most significant risk factor in the development of glaucoma. Reduction and control of intraocular pressure is therefore the primary goal in disease management. This is why the FDA, when approving new medication for glaucoma, views lowering eye pressure as the primary endpoint. A treatment that lowers eye pressure offers a favorable prognosis for the illness.

Up to now, there has been no practical solution for regularly measuring internal pressure in the eye. Adherence to the treatment is very poor, as the patient only becomes aware of his illness once his field of vision has been impaired. Due to the fact that the pressure in the eye fluctuates, an optimal reduction down to normal levels and treatment titration is extremely difficult without regular or continuous measurement. IOP provides a breakthrough solution for this problem and aims to launch its first EyeMate product in 2016. IOP is planning a next financing round until Q1/2016.

www.implandata.com

CURRENT EQUITY POSITIONS CONTINUED

CEVEC PHARMACEUTICALS GMBH

Since September 2012, PVP has been an active investor in CEVEC, the global provider of an innovative human cell expression system – the CAP® Technology. The patented human cell lines are mainly used for the production of novel innovative vaccines, gene therapy vectors and therapeutic proteins. In the last two years it has been shown that recombinant biotherapeutics derived from CAP® cells exhibit improved and unique clinical characteristics.

The most recent example was the demonstration in February 2015 that CEVEC´s CAP®-derived C1 Inhibitor matches the properties of the marketed plasma-derived treatment (Berinert®) with regard to pharmacokinetics. All other known versions of recombinant C1 Inhibitor, including e.g. Ruconest® from transgenic rabbits, so far displayed a significantly shorter half-life than the plasma-derived products. In the future this will pave the way to developing a safer and more economic therapy for acute and prophylactic HAE indications. The excellent protein quality was achieved thanks to the development of a new glycosylation-optimized cell-line (CAP®-GO).

Using its proprietary technology, CEVEC has also recently expanded its activities by forming joint venture partnerships with mid-size CMOs both in Europe and, more recently, in the US to offer cGMP production services in CAP cells.

In September 2014 CEVEC expanded its management team by appointing Frank Ubags as Chief Operating Officer. Frank Ubags has more than 35 years of business experience in well-known companies and possesses the necessary skills and experience to further strengthen CEVEC's position in becoming the leading independent player for human cell line based clinical materials.

www.cevec.com

CRYOTHERAPEUTICS GMBH

CryoTherapeutics GmbH, the developer of a proprietary and novel cryotherapy system for use in the treatment of coronary artery disease, has been a part of PVP's Portfolio since February 2013. PVP has supported the company since its inception in 2010, first as a coach for the high-tech start-up fund, and later as a lead-investor. In these capacities, PVP helped CryoTherapeutics to raise total funds of €6.5 million to date.

With these funds CryoTherapeutics has been able to develop a proprietary cryosystem based on phase-change cooling consisting of a console and various balloon catheters to optimally deliver cryoenergy in a clinical setting in interventional cardiology. The Company has also developed a strong IP position for the use of cryotherapy to treat coronary artery disease.

As of today, CryoTherapeutics has impressively demonstrated the anti-inflammatory effect of a brief cold treatment on lipid rich plaques in the gold-standard animal model and is preparing for a clinical first-in-man and CE Mark study in the second half of 2015. The aim of the study will be to demonstrate that, due to the anti-inflammatory effect of the cryogenic treatment, the lesion responsible for heart attacks can be stabilized and an optimal healing process can be promoted, with a restoration of vascular function.

www.cryotherapeutics.com

CURRENT EQUITY POSITIONS CONTINUED

EMPERRA E-HEALTH TECHNOLOGIES

Emperra has developed and launched ESYSTA® a digital health solution for diabetes care, which includes a smart insulin pen, a blood glucose monitoring device (BGM), as well as a web-based platform and the ESYSTA® app. PVP led the A financing round mid-2013 and has been supporting the company since then in product development partnerships and licensing as well as contacts and building relationships to corporates.

Emperra's smart insulin pen is the first and only pen capable of utilizing insulins from all standard insulin providers (no change of therapy), recording, saving and wirelessly transmitting (via short-wave or Bluetooth®) the dose of insulin injected, together with blood glucose data recorded by the ESYSTA® BGM or other third party BGMs (open ESYSTA® system), to the web-based ESYSTA® portal. The entire individual profile of values (current, longitudinal and retrospective) can be reviewed by patients and physicians not only on a PC but also on mobile devices (iOS and Android) through the ESYSTA® app.

Emperra has already proved the utility of ESYSTA® in 250 patients, within a study carried out together with a large public health insurance company, AOK-North East. The use of ESYSTA® resulted in a reduction of the HbA1c level by more than 1.5%, without any increase of hypoglycemic events, and with a reduction of insulin consumption of around 10%. The study revealed evidence that patients were empowered by ESYSTA® and that it led to a better interaction between patients, physicians and caregivers. All ESYSTA® hardware and software components are CE-certified as medical products with a data security system that complies with ISO/IEC 27001, securing all sensitive data at an industry-leading standard.

ESYSTA® is reimbursed by health insurance companies and currently launched in the German market to specialists and nursing homes. Other geographies will follow within the next 18 months. At the end of 2014 a first closing of a EUR 3.8 million B-round took place with PVP and ILB, and the company is currently looking for additional investors.

www.emperra.com

HUMEDICS GMBH

Humedics, a spin-off of the Charité and the Free University of Berlin, has developed the new „gold standard" in functional liver diagnostics. Up until now, it was not possible to reliably determine the actual function of the liver. With the LiMAx test, which has been used in more than 5,000 patients, it is possible to measure the precise liver function in real time. The mobile breath test includes a device (FLIP device) a breath mask; to determine the liver function, the in vivo diagnostic drug Methacetin is used. Twelve hospitals in Europe are using the test. The LiMAx test has proven to significantly lower mortality in liver operations as well as to improve the patient management of liver patients. In addition, data from new studies have shown the utility of the LiMAx test in the staging of chronic liver disease in patients with liver cirrhosis and fibrosis, and in patients with fatty liver disease.

Humedics is currently finalizing their registration trial for Methacetin solution. Certification of the second generation of the FLIP device and ISO certification of the company is expected in the second quarter of 2015.

PVP has been working with Humedics since 2009 and in 2011 took an equity position in the company as lead investor. At the end of 2014 Humedics attracted a syndicate of well-known international investors, including Vesalius, Seventure and BioMed Invest, to join PVP. €7 million was raised in this round. The money will be used for the commercialization of the LiMAx test in Europe and for further development of the company in order to prepare for geographical expansion and entry into new indications.

www.humedics.de

Pitch training with our CEOs and Beth Susanne at startupbootcamp in Berlin

ABOUT US

Peppermint Venture Partners (PVP) is a private venture capital investor headquartered in Berlin, investing in early-stage European healthcare companies. The main focus of our investments has always been on companies with innovative ideas in the field of medical devices, diagnostics and digital health, along with platform technologies in pharma. Target companies are those that are developing patent-protected technologies and products or innovative business models in their respective areas. The key investment criteria for us are that the companies are addressing an unmet medical need with a view to improving the diagnostics and/or treatment of diseases, while simultaneously aiming to improve quality of life and achieving cost savings. And, of course, we are looking for real healthcare entrepreuers.

PVP was established in 2008 by Ingeborg Neumann, Dr. Joachim Rautter and Dr. Klaus Stoeckemann. At the end of 2010, in cooperation with Charité Foundation, PVP launched the Peppermint Charité Biomedical Fund 1 (CBF). Thanks to its partnership with the Charité University Hospital in Berlin, PVP has a unique network through the medical expertise of one of the largest and most renowned university clinics in Europe, along with its international partners.

As an active investor, PVP guides companies through all crucial phases of development, from company start-up, all the way to the strategic exit. Since the beginning of 2011, CBF has invested in seven companies in the target segments and built up a promising portfolio. Up to four additional investments are planned by the end of 2016. With regard to deal flow, PVP is supporting EYEFOCUS, the first European vertical healthcare accelerator, based in Berlin, together with industry partners (see article page 4-5 of this UPDATE). Through this engagement we are further strengthening our network in the ophthalmology space.

In addition to the management of the CBF, in 2011 PVP assumed responsibility for the external management of the newly-launched Helmholtz Validation Fund (HVF) on behalf of the Helmholtz Association. In the scope of this collaboration, PVP enjoys superb access to one of the largest research associations in Germany. Besides this excellent academic network, PVP also benefits from its long-standing industry contacts.

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