As Published In: START-UP

Windhover Information Inc. | windhover.com | Vol. 16 No. 2 | FEBRUARY 2011

BIOTECHNOLOGY

# PanOptica Inc.

*Picking compounds for eye disorders, early*

13 McGregor Avenue
Mount Arlington, NJ 07856
**Phone:** (973) 663-6470
**Web Site:** www.panopticapharma.com

**Contact:** Paul Chaney, President & CEO
**Business:** Ophthalmology drug development
**Founded:** March 2009
**Founders:** Paul Chaney; Martin Wax, MD, CMO & EVP of R&D
**Employees:** 4
**Financing to Date:** $30 million
**Investors:** SV Life Sciences; Third Rock Ventures; Astellas
**Board of Directors:** David Guyer, MD (SV Life Sciences); Lutz Giebel, PhD (SV Life Sciences); Kevin Starr (Third Rock Ventures); Paul Chaney

*Experts in treating diseases of* the eye say it was not so very long ago that ophthalmology was a sleepy backwater of the pharmaceutical industry, with few competitors and little innovation. That is no longer the case. Now, as with cancer and inflammatory disorders, would-be developers of ophthalmic drugs are increasingly able to look at specific disease pathways and pick precise targets to modulate.

Several top-selling ophthalmic compounds show there is merit in molecular-level focus, and big money to be made by following pioneering compounds with similar drugs that boast clinical or cost advantage. One case in point: inhibitors of vascular endothelial growth factor (VEGF), which have quickly become the standard treatment for neovascular or "wet" age-related macular degeneration (AMD). This serious form of AMD is less common than the dry type, but affects two million Americans and is responsible for 90% of the blindness caused by the disease.

The first VEGF inhibitor approved for AMD came to market in January 2005: *Macugen* (pegnaptanib) launched via a generously funded co-development and co-promotion deal between **Pfizer Inc.** and what was then Eyetech Inc. (now a division of **Astellas Pharma Inc.**'s **OSI Pharmaceuticals Inc.** known as **OSI Eyetech**). Macugen quickly overtook the existing treatment, but was itself almost immediately eclipsed by **Roche**'s **Genentech Inc.**'s *Avastin* (bevacizumab), also a direct inhibitor of VEGF. Though Avastin had been developed to treat colorectal cancer and approved for that early in 2004, by mid-2005 it was being widely used off-label to treat AMD. The VEGF inhibitor Genentech formally developed for use in the eye, *Lucentis* (ranibizumab) has sold well since winning FDA's approval in June 2006: 2010 revenues reached $1.1 billion. Still, ongoing off-label use of the much lower-priced Avastin helped push that drug's sales over $6 billion in 2010.

The founders of **PanOptica Inc.** admit they are inspired by the big impact the drug originally developed for cancer is having on the ophthalmic market. So much so, that they aim to do pretty much the same thing. "We intend to search out compounds from other disease areas such as cancer, diabetes and other metabolic disorders, and find those likely to have potential for serious eye disorders," declares company co-founder Martin Wax, PanOptica's CMO and EVP of R&D. Wax is concurrently a professor of ophthalmology at the University of Texas Southwestern Medical School in Dallas. A clinician highly regarded for his expertise with glaucoma, Wax served as VP of R&D at Alcon Laboratories from 2003 to 2008. He says that corporate role put him in position to see and hear a great deal about new approaches to treatment as well as compounds in development and available for in-licensing.

PanOptica co-founder Paul Chaney enjoyed a similarly privileged purview as president of (OSI) Eyetech Inc., the eyecare subsidiary of OSI Pharmaceuticals bought out by employees in 2008. Chaney joined Eyetech as COO in 2003, shortly after its Macugen development deal with Pfizer. He had previously served several years as VP of Pharmacia's global ophthalmology business, starring *Xalatan* (latanoprost).

"When we started PanOptica, we both knew who was working on what, what looked interesting and might be valuable. We had a sense of what was accruing in the literature and we were tracking people developing compounds against certain targets," Chaney declares. Both he and Wax expect that their deep roots in ophthalmology will keep PanOptica in the flow for in-licensing opportunities. Their cause can only be helped by their venture capitalists' connections: SV Life Sciences in particular has demonstrated commitment to the area.

Nice as it is to be in the loop, Chaney and Wax insist they are not waiting to be shopped appealing molecules but rather intend to grow PanOptica by actively seeking out compounds that meet specific criteria they have defined as vital for ophthalmic drugs. To warrant consideration, a compound should influence a target that is at least "reasonably well validated," Chaney says, so there is both clinical and regulatory precedent for an endpoint and approval. The molecule needs to have been rigorously tested for some indication, not necessarily ophthalmology, so that a robust safety package exists.

Most companies seeking to repurpose drugs apply basic selection criteria like those Chaney describes to reduce risk, but Wax says PanOptica is especially stringent

about the physical chemical attributes a compound must have. Although many would-be drug developers figure they can finesse their way to a drug if they have a compound that interacts well with a target, Wax says that approach does not work in ophthalmology. "The eye is unique," he declares, explaining, "No amount of medicinal chemistry will get a drug to the back of the eye if the starting compound does not have specific properties. Pharmacokinetics and formulation are the critical factors."

Founded in March 2009, and based in Mount Arlington, NJ, PanOptica is clearly not the only big name, venture-backed start-up looking to in-license and develop compounds for serious eye disorders such as AMD. Nor is it the first to experience just how unwilling Big Pharmas can be to release compounds they have sitting on the shelf – no matter how much promise others perceive in them. Wax acknowledges feeling frustrated by certain executives "who simply do not perceive the potential for revenue that is right there." Chaney also, although he observes, "With all the rationalization going on, companies are realizing they may not have enough expertise in this particular space. Also, because of pipeline challenges, people are looking to monetize assets in ways they had not before. We have seen some interest, some opening."

So far, PanOptica has in-licensed just one compound, which the co-founders aim to develop as a topical treatment for wet AMD – possibly the first, though others share that aim. The company has revealed little about the drug candidate it got from OSI Pharmaceuticals, in exchange for an undisclosed amount of up-front cash, an equity interest in the start-up, and the promise of potential milestone and royalty payments.

The compound now known as PAN-90806 is an inhibitor of the VEGF receptor that was previously tested in humans for oncology, but is still in early preclinical testing for this indication. PanOptica anticipates beginning a Phase I trial of the molecule in 2012.

Any treatment now being developed for wet AMD will have to be compared with Lucentis and/or Avastin, Wax and Chaney acknowledge. It is a market reality they believe will play in their favor, if PAN-90806 can match or nearly match the levels at which those injectable drugs saturate the back of the eye. If PanOptica's drug candidate can be clinically proven as effective as those marketed VEGF inhibitors, Chaney says, "We believe we will see a swing away from injections. It's what you would want to do with your family member," he asserts. Injections to the eye are now routine, Wax points out, and while this is okay for most patients at present, he believes that, "The cumulative risk of chronic injections is mounting and will become an ugly thing as AMD treatment matures." Beyond safety, he figures topical treatment of AMD would reduce the burden on patients as well as physicians: "Requiring a 75-year-old patient to see the doctor every month or every two months is a significant burden."

Like other companies seeking to identify and develop compounds still only in late preclinical or early clinical development, PanOptica intends to remain small, focused and flexible. By drawing on expertise and leveraging contract research organizations, this start-up seeks to wring the risk out of assets that larger firms may later see as worth having.

PanOptica raised $30 million in January 2010 through a Series A financing round led by SV Life Sciences and Third Rock Ventures. The money is intended to allow the start-up to bring PAN-90806 and a second compound through Phase II clinical trials within three years, and to identify a third.

[A#2011900039]

— Deborah Erickson