Placing Bets on Cancer Biotech

Venture capitalists see paybacks from personalized diagnostics and treatment

For biotechnology startup firms, 2011 has been full of mixed messages. Although these companies play a critical role in bringing innovative diagnostics and treatments to the clinic, the venture investment community has pruned back its support. In September, for example, a survey by the National Venture Capital Association showed that 39% of the venture firms polled planned to decrease their funding of American biotechs during the next 3 years, as did 39% of those companies now backing cancer research firms.

But many venture capitalists (VC) still say they like cancer treatments and diagnostics—because of the promise of personalized medicine and the prospect of strong payoffs for well-placed bets.

“We do believe that now’s the time when it’s all coming together,” says Kevin Starr, a founding partner of Third Rock Ventures, which invests at the earliest stage of startup firm development.

Historically, the venture community sought to bring startups to a point where they could cash out on a big initial public offering of stock. But the economic crisis of the past several years mostly eliminated the prospect of reaping huge profits from going public. Instead, most VCs now want to build companies that can either partner with or get bought out by pharmaceutical firms.

“Once you have exciting new approaches in cancer, there’s huge pharma interest,” says Ansbert Gadicke, managing director of MPM Capital, which specializes in health care investments.

However, the expected payoffs are lower than they once were, and investor involvement in companies is deeper, several VC experts point out.

Ten years ago, VCs were shooting for payoffs amounting to 10-times earnings, says Janis Naeve, managing director of Amgen Ventures, the VC arm of the drug giant. “Post-2008, VCs are more modest in their expectations, more diligent in their financing of companies they support, and really in it for the long haul,” she says.

TARGETED OPPORTUNITIES

With the fast-growing trend toward personalized cancer medicine, investors are particularly intrigued by opportunities to package treatments with diagnostics.

Bruce Booth, PhD, a partner in the life sciences group of Atlas Ventures, says he saw the future of cancer care in August, when the U.S. Food and Drug Administration (FDA) approved Pfizer’s lung cancer drug crizotinib (Xalkori) alongside a
diagnostic test by Abbott Molecular that determines whether a patient has the EML4-ALK fusion attacked by the drug. Research identified that molecular target only in 2007—a “staggering” pace from lab to patient, Booth says.

Such drugs that target a small genetically defined population and are approved in tandem with a therapeutic look very promising, Booth says. “The challenge is how many of those opportunities are out there, and how do you define them at the start rather than having to learn about them later?”

Cancer drugs are popular targets for venture investments, Amgen’s Naeve adds, in part because they don’t require the enormous clinical trials of a heart disease or diabetes drug. By targeting one particular use with specific molecular targets, trials can be much smaller—and cheaper.

Then, after FDA approval for one indication, firms may be able to expand a drug’s use without hugely expensive trials, notes John Carroll, editor of the newsletter Fierce Biotech. He cites Novartis’s success in expanding indications for its kidney cancer drug everolimus (Afinitor)—which received federal approval after phase III testing in just 410 patients—to breast and other cancers.

Some clinical trials can begin by gathering a limited amount of data for a very small, orphan market, he says. “Once you’ve got approval, you can keep on building. You don’t see that in other areas much.”

Of course that approach doesn’t always work, as Genentech is learning with its anti-angiogenesis drug bevacizumab (Avastin), initially okayed for use against metastatic colorectal cancer. Although the FDA subsequently approved Avastin for breast cancer as well, it is reconsidering that decision.

Drug pricing also may be a challenge. Last year, stock analysts “swooned” when Dendreon released its metastatic prostate cancer drug sipuleucel-T (Provenge) with a $93,000 price tag, Carroll of Fierce Biotech notes. “People did the math on the $93,000 and came up with some blockbuster figures,” he says. But partly because of sticker shock, sales have been much lower than expected, leading to layoffs and a meltdown in Dendreon stock.

NO LAB NEEDED?

On the upside for investors, many biotech startups today are practically “virtual companies” that outsource most of their work. This strategy means that initial venture investments can be relatively modest. Small size also can make these firms more flexible—and easier to sell or shut down.

At startup, academic researchers decide how the molecule is designed, and the work is farmed out to a lab-for-hire, explains Booth of Atlas Ventures. “You say ‘build us a molecule.’ They ship you the drug. You send it to your partner doing your cell work or animal model work,” says Booth. “You can effectively run a biotech without having your own bench-top equipment and test tubes.” He estimates that about one third of his company’s portfolio is invested in virtual companies.

Virtual companies have become widespread in the last 5 or so years, he says, with the spread of contract research organizations that can provide not just lab operations but other services extending through clinical trial operations.

—Karen Weintraub

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