Partnering/Licensing

Published online: 17 November 2005, doi:10.1038/bioent892

▼ Fishing farther upstream

Stacy Lawrence¹

Stacy Lawrence is a freelancer in Oakland, California

As biopharmaceutical companies are pushed up the pipeline to find the best licensing deals, some small biotechs are starting to command more money at an earlier stage in their research.

Hoping to fill their pipelines, big pharma and big bio are increasingly turning to early-stage deals with biotechs. Even discovery stage and preclinical deals, which offer the least possible assurance of an eventual positive outcome, are on target to breaking new ground this year after years of being either overlooked or undervalued (see [Fig. 1](#)).

Figure 1: Discovery stage and preclinical deals are gaining strength

Source: Recombinant Capital

New data from Walnut Creek, California-based Recombinant Capital are an eye-opener: of the ten largest disclosed discovery deals ever recorded, eight were signed this year. New data also reveal that Basel, Switzerland-based Novartis, in particular, seems to have developed the largest appetite for these so-called upstream prospects. Unless something happens in the next six weeks to upend the rankings, Novartis will stand out as the world's leading early-stage dealmaker.

All biotechs benefit from this trend, but none more than young and innovative biotechs whose financing valuations and prospects of an initial public offering turn on the value and terms of their product development deals and the quality of their partners. Since the market bust of 2001, large partners have been in control of terms. Further complicating matters was the fact that most of them were interested only in late-stage product deals. The tide has certainly turned.

"If pharma could fill up their shopping bag with phase 2 compounds, they would," notes venture capitalist Mike Ross, a partner in San Francisco-based Silicon Valley Life Sciences. "They've picked over the later-stage opportunities so thoroughly, now they're grazing farther up the food chain. If you have a target that the pharma companies believe in, you can get terms that are almost equivalent to a phase 2 deal."

“Of the 10 largest disclosed discovery deals ever recorded, eight were signed this year.”

Don Drakeman, CEO of Princeton, New Jersey-based monoclonal antibody company Medarex, can certainly attest to this. His firm has banked \$175 million in cash with three recent early-stage deals. "If they don't get it at phase 1," he says, pharma and big biotech firms feel that "they might miss out because someone else will get it at an earlier stage."

"We have not traditionally been interested in early stage. We are now," Drakeman observes. "We are getting phase 2 terms for phase 1 or

Medarex

The fishing is better upstream:
Medarex CEO Donald Drakeman

preclinical deals. It's a seller's market."

And the numbers seem to bear out these assertions. Through September 1, the median value of a phase 1 deal might well have exceeded the median value of a phase 2 deal for the very first time (see [Fig. 2](#)). It is impossible to know for certain because this analysis, performed by Walnut Creek, California-based Recombinant Capital, is only able to take into account deals with disclosed terms, which represent only a fraction of all those actually executed.

Figure 2: Average biotech out-licensing deal terms

Early includes discovery and lead molecule. Mid includes preclinical and phase 1. Late includes phase 2 and later. ^a 2005 does not include Q4 data. Source: Recombinant Capital

The average size of a discovery deal is up by more than a third in the last few years from \$55 million to \$76 million (see [Fig. 3](#)). And even the median discovery deals, a measure that helps to sort out the impact of a few extraordinary deals, is up to \$34 million after hovering around \$20 million for the better part of a decade.

Figure 3: Median biotech out-licensing deal terms

Early includes discovery and lead molecule. Mid includes preclinical and phase 1. Late includes phase 2 and later. ^a 2005 does not include Q4 data. Source: Recombinant Capital

Discovery deals represent more than half of all biotech out-licensing, whereas other types of lead molecule, preclinical and phase 1 deals account for about 15% of total deals. Still, although the terms for discovery deals have improved dramatically in the last few years, their share of deals is also somewhat smaller than it was five years ago when they were almost three-quarters of out-licensing deals.

The share accounted for by other early stage deals through phase 1 has doubled over that time from about 7%. And terms for those types of deals have exploded. In the last two years, average terms for lead molecule, preclinical and phase 1 deals have all exceeded the \$100 million mark—representing average terms that have more than tripled for lead molecule and more than doubled for preclinical.

And as this shift up the pipeline has occurred, some companies seem to be exploring the possibilities of very early stage deals more than others. Awash in positive financial news, this year Novartis has emerged as the new discovery dealmaker to know. Not only has it announced the largest discovery-stage deal ever (\$700 million for RNAi research with Cambridge, Massachusetts-based Alnylam), but it has made 4 out of the 15 largest discovery announcements and 8 deals in total.

“Internal programs and external programs are on a level playing field,” says Levin. “If there is something that can be done better and less expensively externally it will be done that way.”

S. San Francisco, California-based Genentech has also stepped up its discovery-stage deal making 3 of the top 20 deals so far this year and 5 deals total. New York-based Pfizer, Basel-based Roche and London-based AstraZeneca dominated discovery stage deal-making last year, but although each made at least one major announcement this year, none has pursued discovery deal-making with the same vigor as Novartis.

Three years ago, Novartis split the organizational responsibility for early and late-stage deal-making. Jeremy Levin was brought in as the global head of strategic alliances for the Novartis Institutes for BioMedical Research to lead the search for pre-phase 2 partnerships.

Part of his mission has been to rationalize the competition between company research units and small biotechs. “Internal programs and external programs are on a level playing field,” says Levin. “If there is something that can be done better and less expensively externally it will be done that way.”

This trend may have spread more broadly as well. “In the old days, you looked to the internal program,” notes James Thomas cofounder of Stamford, Connecticut-based Thomas McNerney & Partners, a venture capital group focused on healthcare.

“Deals got done as supplemental deals to the internal program. That research director was being swayed by his belief in the in-house program.” But now, observes Thomas, major biopharmaceutical companies are more likely to look to outside companies for major portions of research programs.

For small biotech companies, this could be good news. Increased

investment by biopharmaceutical companies in early stage research could encourage venture capitalists to start investing earlier, as well. But as long as the dramatic increases in early-stage deal terms are largely confined to a handful of companies with magnetic research like RNAi and monoclonal antibodies, a fundamental shift in early biotech funding can't be expected anytime soon.

"I'd like to believe that it's going to lead to more funding by venture guys of early-stage research," says Thomas. "But I don't think it's going to happen. If 20 companies a year get big deals, it doesn't fundamentally change the landscape for the other 400 companies."

Web links

Websites referenced:

- [Silicon Valley Life Sciences](#)
- [Medarex](#)
- [Recombinant Capital](#)
- [Novartis Institutes for Biomedical Research](#)
- [Thomas McNerney Partners](#)
- [Alylam](#)

SPRINGER NATURE

© 2019 Nature is part of Springer Nature. All Rights Reserved.

partner of AGORA, HINARI, OARE, INASP, ORCID, CrossRef, COUNTER and COPE