

**Strategic Research Institute
Antibody Financing Conference
San Diego, CA
April 8, 2002**

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Good morning!

I see we have an international audience here with us so I also want to say:

Bonjour; Buon giorno; Guten Morgen; Dobroe Utro and Ohayo Gozai Masu!

And, as a special tribute to Dr. Caesar Milstein who was born in Argentina in 1928 and who passed away two weeks ago tomorrow as a father of modern antibody technology, I say, “Buenos dias, y muchos gracias para su grande invento!”

In this session we’ve been asked to talk about Wall Street’s views and valuations of antibody companies.

Fariba Ghodsian (guest panelist) and I both work on Wall Street, but in different ways. She is responsible for making investment decisions as head healthcare analyst at Roth Capital Partners, whereas my firm helps link life science companies to investors and vice-versa.

We were the original investor relations firm for Amgen.

More recently we worked with Medarex when it was a four dollar stock on its way to two hundred, and we also helped reboot Avanir on Wall Street when it was under a buck and rose to nine.

Both of those engagements helped give us some special insights into this morning's topic.

For Wall Street, the notion of antibody drugs began with the 1975 discoveries by Drs. Milstein and Kohler.

Their work generated lots of publicity as we all know and, ultimately, lots of disappointments – at least among investors.

But time has a way of healing many wounds.

Some 25 years later, in the summer of 2000, Dennis Winger, CFO of Celera's parent, sat in my Connecticut living room and casually talked about Celera performing a proof of concept with the Spanish Fly – a preamble of sorts to defining all the genes of the human body.

Dennis is a bright guy, but not a scientist. So all he could say was that his company had the second most powerful computing system in the world and therefore felt it had a chance of success.

So began the biggest tidal wave of investor enthusiasm to hit biotech since interferon was rubbed on stockbrokers.

As the human genome was pieced together, the wave grew ever more powerful.

It moved faster and, like a force of nature, developed whitecaps we would come to know as antibodies – the visible, crowning evidence that there was a very fast way – and maybe the best way -- to transform the knowledge of genomics into useful commercial products.

Almost up to that point, antibody technology hadn't been considered particularly robust.

There was the murine issue, the rejection by the immune system.

There came the mouse-human chimeras and then humanized mice, and then the monumental move to essentially discredit all but the transgenic mouse.

If partially human was better, did it mean that fully human had to be the best?

As clinicians learned more, they came to realize that the source of an antibody, or how it's generated, may have little bearing on its ultimate utility.

We know now that nanomolar affinity is not necessarily the end-all.

Cross-reactivity and avidity have entered the selection criteria.

Some technologies other than transgenic may offer faster target throughput.

But there are patent issues also, and now a world full of worry about manufacturing capacity.

Meantime, Wall Street's love affair with technology itself is being replaced with a focus on products of the technology.

Some of the greatest valuations nowadays are going to the companies that have integrated their technology with targets and, hopefully, manufacturing access, creating what many believe is a business model with the best risk/reward.

Antibody platform companies selling only their technology have to settle for skinny royalties, but a company that turns over a technology/target combo

that's been fashioned into a clinically proven product can look at a 35-40 percent royalty, or more.

More investment will have been made and more risk will have been taken – but in that regard antibody metrics favor the risk-taker.

In the small-molecule world, 90 percent of the candidates fail. But, according to a recent study by Tufts Center For Drug Development, 25 percent of antibodies win.

Nine of ten small molecules fail in the clinic; one of four antibodies make it.

Sam Isley of Orbimed Advisors calculates worldwide antibody drug sales are running roughly \$4 billion annually.

By 2010, UBS Warburg predicts sales will total \$24 billion.

In a few moments Fariba will share some metrics on how investors are valuing those forward revenue streams compared to other drug opportunities.

As a slight pretext, I thought it might be helpful to share a few observations based on three of the biggest pure plays in the industry – Protein Design Labs, Abgenix and Medarex.

Together they are spending more than \$5 million dollars a week developing antibody drugs.

Together they have created more than 80 partnerships and joint ventures to investigate an untold number of antibody targets.

In 18 to 24 months, two truths could or should be upon us:

First, these three companies expect to have at least 50 products in or through Phase III;

Second, their current cash will have been cut in half, putting them closer to what Don Drakeman (of Medarex) calls the “wake up with chills” money level he never wants to revisit.

The natural idea at that point, of course, is to go back to the money window.

With lots of accomplishments under their belts, these three industry Trojans and others behind them will be able to offer investors shares at probably half or less the prices they eagerly paid a year or two ago.

Sound like dreamland for investment bankers?

Maybe, but not so fast, some are saying.

Funding these proven technology developers to grow them into fully integrated companies just may be an idea that could stand at bit more thought.

Traditionalists, of course, would monetize the pipeline, and let the innovators take their goods to market.

That’s the way drug companies become fully integrated – from R&D to marketing – and it’s exactly the process that delivered big pharma to us.

What some investors tell us is that the idea of big pharma – in their minds – needs to be retooled.

They say big pharma has so many things to worry about that they’ve managed to put innovation on the back burner and let their pipelines run pretty close to dry.

So the question becomes, when it's time to recapitalize the antibody innovators, is it best to fund them into forward integration?

Or might there be a different approach that will keep them singularly focused on what they do best – converting technology into products, unencumbered by marketing and costly sales organization?

When you think about it, antibody companies have done almost as many or more partnerships with companies their own size or smaller, few of which have marketing organizations.

So for a fair number of those 50 or so products coming down the clinical pipe, the field is wide open as to who will market them.

Some sage investors forecast spinouts of Phase III drugs through rights offerings or other means into a string of IPOs, pure plays on the marketing of advanced antibodies that Wall Street will snap up.

The newly minted IPOs will be the darlings of risk-averse investors because the chances of success will be high and projected revenue large.

The IPOs among themselves will trade antibody products so each can perfect their therapeutic franchises and build the most productive marketing forces.

The math could be faulty, but one portfolio manager we know could see 5-15 new companies being spun out, Thermo Electron style, during the next 24 months.

The innovator would keep a royalty stub and put a new hoard of cash to work doing what they have demonstrated they can do very, very well.

They could continue mining for antibody drugs, or they could begin to apply their well-honed talents and uninterrupted culture of innovation to diversity beyond antibodies.

Like Jerry Yakatan of Avanir says, you don't ever want to forget that small molecules can be taken orally. They're pretty cheap and they're the favorite for chronic diseases – all of which means lots of scripts and lots of money.

Meantime, what's attracting money to the antibody space today?

Newcomers with technology will have to bear the burden of proving what Pat Lane of Salomon Smith Barney calls “big-time value-added propositions” – if not, forget it.

Wall Street's interest in soaking up shares of existing developers favors those who have harnessed both platform technology and targets with a manufacturing component.

Look for workable technology, not necessarily the latest or greatest.

Look for top-flight people with experience in protocols and regulatory strategies.

Look for heavy partnering activity – remember Tuft's one-in-four odds.

Look for balance sheet strength because it's the currency to put the pieces together.

Don't overly concern yourself with near-term profitability –because as soon as that happens, values often shift to a P/E ratio – and sometimes there's a big

valuation disruption waiting for the “E” to justify the “P”.

The most money anyone ever made in just about any successful high-tech company was before the first profit – you can name them on all your fingers and more -- Microsoft, Amgen, Intel, Dell, Immunex and on and on.

Now let’s hear one analyst’s views of this year’s winning scenarios.

Thank you.