

Biacore

Contact Information

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Overview

Biacore produces analytical instruments that use its affinity-based biosensor technology.

Stage of Development

- Biacore has been selling protein biochips for more than a decade.
- The company is profitable and is publicly traded.

Technology

- Biacore's technology relies on surface plasmon resonance (SPR) and enables detection of biomolecules and monitoring of binding events between two or more molecules, in real time, without the use of labels.

Competitive Assessment

STRENGTHS

- SPR is the gold standard for measuring binding kinetics, affinity, and interactions.
- SPR does not require labels, and the various biochips offered by Biacore have a wide range of surfaces. This makes the platform versatile enough for a broad range of proteins.
- Biacore has an established and proven technology supported by more than 2,000 publications. Whereas other protein biochip companies are developing new technology, Biacore is building from an established foundation.
- Biacore's strong customer base provides an important advantage for launching new products.
- Biacore is a profitable company with growing revenues. In the first three quarters of 2001, the company earned \$4.6 million on \$46.2 million in revenues. The revenues increased 33% over the same period in 2000.

WEAKNESSES

- The Biacore platform requires a certain level of skill and experience to operate.

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Competitive Assessment (cont.)

OPPORTUNITIES

- Biacore has the potential to expand into new applications, including proteomics, lead optimization, and biopharmaceutical manufacturing quality control.
- Biacore formed a collaboration with Bruker Daltonics in October 2001 to develop SPR-MS (mass spectrometry) technology for proteomics analysis. The details of the system are not available yet, but the addition of MS will allow Biacore to move in the direction of studying unknown proteins. The initial focus will be on recovering bound material and analyzing it by mass spectrometry.
- Biacore acquired the rights to sell Axiom's fluorescent cell-based assay technology in September 2001. Biacore believes the technology is complementary to its high-throughput SPR platforms used in lead optimization. The company hopes to launch the new system by the end of 2002.
- Biacore moved into hit selection, lead optimization, and early ADME (Absorption, Distribution, Metabolism, and Excretion) in September 2001 with the first sale of the S51 to Millennium Pharmaceuticals. The sale marked a key milestone in a developmental collaboration that has been running for more than a year. Under the terms of the collaboration, Biacore develops array instrumentation and Millennium develops some of the applications for the technology. This arrangement provides an outstanding opportunity for Biacore to work closely with a key customer, and provides an initial customer base for new products.
- Biacore extended its supply of analytical equipment for biopharmaceutical drug development to Boehringer Ingelheim by offering new instrumentation for in-process controls and routine quality control procedures in June 2001. This marks another milestone in the collaboration between the two companies.

THREATS

- Biacore does not face any immediate threats, but there is a minor possibility that other less-expensive technologies could supplant the company's SPR platform within a few years. HTS Biosystems, for example, claims to have a method for greatly reducing production costs for SPR-based protein biochips, but has yet to release a commercial product.

Biacore dominates one sector of the protein biochip market: the study of protein interactions.

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Products

| Product | Status | Description | Deal Structure | Attributes | Limitations |
|---|---------------|---|----------------|---|---|
| Biacore instruments: Biacore 1000, Biacore 2000, Biacore 3000, Biacore S51, Biacore C, Biacore X, Biacore Q, and Biacore J | On the market | Biochip-based equipment to analyze biomolecular interactions. | Off the shelf | Label-free analysis of binding. | Maximum throughput (with the S51) of 384 samples in 24 hours. |
| Biacore Software: Biacore Control, BIAevaluation, and BIAsimulation | On the market | Analysis tools. | Off the shelf | Integrates with Biacore instruments. | Limited integration of additional data types. |
| Sensor Chips: CM5, HPA, SA, and NTA | On the market | Biochips with different surfaces for analyzing biomolecular interactions | Off the shelf | Surfaces allow for the capture and analysis of a range of binding interactions. | Capture conditions must be known. |
| Pioneer Chips: B1, C1, F1, J1, and L1 | On the market | Biochips with different surfaces for analyzing biomolecular interactions. | Off the shelf | Extends the range of surfaces offering potential for new experimentation. | Performance less stringently guaranteed than in biochips above. |
| SIA Kit Au | On the market | Usable with a wide variety of coating techniques. | Off the shelf | Tolerant of harsh chemical coating conditions. | Surface chemistry not as well supported as in the biochips above. |