One for the Record Books

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July's BioQ&A will feature filtration at both the bench and process scales. We invite readers and suppliers to contribute questions and answers.

This month, BioQ&A departs from its usual territory, forsaking the intricacies of technology to present a set of loftier questions, the answers to which will be researched and published in a subsequent issue. We hope readers enjoy perusing our list, perhaps even answering a few questions in the meantime.

Health care

Human growth hormone was the second recombinant protein product (after insulin) to receive regulatory approval. How many miles taller is the collective human race today as a result of this product?

Which nation's regulatory bodies have approved the greatest number of recombinant protein or monoclonal antibody-based drugs?

What is the approximate value of the worldwide sales of recombinant protein and monoclonal antibody-based drugs from the launch of human insulin to the present day?

How many lives have been saved by inoculating people against disease with vaccines prepared by recombinant DNA technology?

Which recombinant protein or monoclonal antibody drugs been granted exclusivity privileges under the provisions of the U.S. Orphan Drugs Act?

Name ten companies which have been or are still involved in the development of sepsis therapies.

Name ten companies developing AIDS or HIV vaccines.

How much human genome data (in bases) has been deposited in the international sequence depositories?

Finance

In 1980, Genentech's stock was floated. Including the \$38.5 million raised in that flotation, how much money have biotechnology companies worldwide raised on public markets since then?

What proportion of that money came from outside the U.S.?

If you had invested \$100 in Amgen stock at its flotation in 1983, how much would that investment be worth today?

Business

How many biotechnology companies are there (1) worldwide and (2) outside the U.S.?

How many biotechnology companies have registered (1) at least one year with an operating profit, (2) more than one year's operating profits, and (3) overall profitability?

How much do major corporations currently have invested in the equity of biotechnology companies?

In 1983, when *BioTechnology* was launched, it was certainly the case that the combined sales in companies which supplied research equipment and reagents to the biotechnology community exceeded the combined product sales of the biotechnology companies themselves. Is this still the case?

Are there any single companies that are equivalent to the combined commercial biotechnology sector in terms of (1) sales volume, (2) employees, (3) research and development expenditure, or (4) paper valuation?

How much benefit do lawyers gain from the average biotechnology patent dispute?

Agriculture and environment

Approved field trials of recombinant plants started in autumn 1986 with the planting of tobacco in the U.S. and Belgium. Since then, 94 percent of approved trials have been conducted in just five countries. Which?

On which five crops have the greatest number of field trials been conducted?

What is the current sales value of products of biotechnology in the agriculture market?

How long has bovine growth hormone (bovine somatotropin) been waiting for regulatory approval as a milk yield-increasing agent?

Most of the major crops species can now be stably transformed with--and express--heterologous DNA. But in what chronological order and when, for the following, were the breakthroughs achieved: maize (corn), sugar beet, oil-seed rape, tomato, tobacco, barley, wheat, rice, cassava, potato, sunflower?

Name ten companies which are addressing environmental problem using the tools of biotechnology.

People

How many people are involved in biotechnology research worldwide?

Which five individuals have benefited most financially—on paper, at least—from the public flotation of biotechnology companies?

Who is the highest paid biotechnology CEO in the U.S., and outside the U.S. (and what do they make)?

Which Nobel-prize winners still serve actively on the boards or research boards of biotechnology companies?

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