CORPORATE RESTRUCTURING

PHILLIPS DROPS IN-HOUSE PHARMACEUTICAL R&D

BARTLESVILLE, Okla.—"Phillips Petroleum Company will discontinue its research and development program in the area of pharmaceutical products, much of which has been based on the *Pichia* [yeast expression] system," reads Phillips' gloomy internal bulletin-board posting.

Devastated employees wouldn't comment for the record, but a Phillips spokesman explains that decreasing profitability and lagging oil prices have led the firm to undertake company-wide restructuring to increase its net income and strengthen its cash position. "These are not really anti-takeover measures," he says. "They are really streamlining the company."

Phillips still won't disclose exactly what drugs it was planning to plug into its efficient yeast expression system, but in the past the company has mentioned vaccines, pharmaceuticals (such as tumor necrosis factor), and growth factors. The high cost of development and clinical trials caused Phillips to drop its in-house drug program, but the spokesman reports that the company "will honor all existing contracts." These include biotech deals with the Salk Institute (La Jolla, CA), Baylor College of Medicine (Houston, TX), and West Germany's Bissendorf Peptide, as well as a recent pact with Wadley Technologies Inc. (Dallas, TX).

"We are essentially going to abandon the idea that we were going to get into the pharmaceutical business as such," summarizes one employee. According to another, "Several options are being pursued for how Phillips is going to handle it, including the possibility of an outside buyer stepping in."

Also unclear is the fate of the 40 or so people involved in Phillips' pharmaceutical effort; they will either be laid off or reassigned internally. And the fate of Phillips 66 Biosciences Co., the subsidiary that actually manages the biotech collaborations, remains up in the air as well.

Despite these biotech cutbacks, Phillips' Provesta Corp. subsidiary will continue its work on yeast-derived food and feed products, enzymes (such as alcohol oxidase), and biological pesticides (based on pheromones). In fact, the firm has just installed a 25,000-liter fermentor that has the capacity to produce 4 million pounds of dried yeast product per year. And, in a clear case of technology overkill, Provesta will also gain the use of Phillips' state-of-the-art pilot plant that was originally slated to produce pharmaceutical-grade rDNA products. **—Arthur Klausner**

INTELLECTUAL PROPERTY

PATENT OFFICE REORGANIZES BIOTECH COVERAGE

WASHINGTON, D.C.—The U.S. Patent and Trademark Office (PTO) is isolating biotechnology into a single examining group. The dual goals are to reduce the staggering biotech patent backlog and make the most efficient use of PTO's biotechnology expertise.

Currently, most biotech-related patents are examined by PTO's Group 120 (biotechnology and organic chemistry), but some of these applications find their way into Group 150 (proteins) or Group 130 (chemical analysis and non-immunological testing). The biotech components of these three groups will be extracted and placed into the brand new, 75-member Group 180.

According to Charles Van Horn, PTO's deputy solicitor, the reorganization has been in the works for about nine months and should actually have occurred by the end of March. Speaking at McGraw-Hill's third annual executive seminar on "Biotechnology Strategic Management," the former director of Group 120 outlined the depressing situation for biotech patents as of January 1988. At that time there were 6,900 pending biotech patent applications in Group 120 (4,000 of which were new and had yet to be reviewed). During 1987, Group 120 did complete some 2,200 applications; unfortunately, about 3,100 new ones came in during the year. Decisions on biotech patents take an average of about two years, but some applications have been at PTO two-and-one-half years without even being touched.

Van Horn reported that Group 120's staff stood at 42 examiners as of January, up from 31 the year before. The Group's hiring allotment for the current fiscal year is 16–18; however, a dozen of the Group's examiners have left during the past six months—many for the "greener" pastures of private industry. "It's a very serious trend," lamented Van Horn, noting that the defection of a senior examiner hurts doubly by also decreasing PTO's ability to train new recruits. He added that it takes about five years to fully train an examiner.

How much PTO's realignment will actually help remains unclear. According to Van Horn, the workloads in Groups 130 and 150 were lighter than in 120, so these examiners should be able to share some of the increasing biotech burden. But other experts wonder whether this added responsibility may in fact *slow* some applications that are currently being reviewed promptly. **—AK**

AGBIOTECH

AUTOMATED PLANT PROPAGATION

ASHRAT, Israel— Developers of an automated plant micropropagation system claim hundred-fold increases in plant tissue culture productivity. Concomitant price reductions could expand commercial micropropagation beyond low-volume, high-value ornamentals into such bread-and-butter crops as tubers, bulbs, vegetables, and woody species. Micropropagated seedlings might even compete with relatively expensive seeds.

Plant Biotech Industries here has automated the entire process of micropropagation. A microprocessor-controlled series of valves and pumps moves the plant material through the system, from the first stage of increasing its bulk in a proprietary bioreactor, through chopping, sieving, and sorting in a bioprocessor (also of proprietary design), to distributing the propagules into culture vessels for growth. Finally the seedlings are transferred to automated planting equipment, placed in greenhouse trays, and grown to a height of 5–6 inches—all without ever being touched by human hands. This virtual elimination of manual labor not only saves operating costs, it also ensures that seedlings are pathogen-free when delivered to customers.

The automated micropropagation system eliminates time-consuming plating of plant cells onto gel media. Instead, growth to the propagule stage takes place inside the bioreactor. A pilot facility being built in Israel as a joint venture with Primerica (Greenwich, CT) will produce 15 million plants per year, according to a consultant for the company.

—Pamela Knight