BTG BUY-BACK

DU PONT MERCK ENDS FOSTER CARE OF HGH

WILMINGTON, Del.—Despite the sweltering summer heat, it seemed like Christmas as Du Pont Merck Pharmaceutical (DPM) here practically handed back its U.S. rights to the human growth hormone (hGH) developed by Bio-Technology General (BTG, New York). For $1 million in stock, (less than 5 percent of the company) and future royalties that top out at $5 million, BTG bought back its *entre* into the expanding $200-million-a-year U.S. market for treating short stature.

Foster care by DPM has not stunted BTG's hGH on the approval trail: clinical trials and a New Drug Application (NDA) filing for short stature are over. Though Eli Lilly (Indianapolis, IN) has exclusive Orphan Drug status for methionine-free hGH, that protection will last only through 1994. By then, at the current 20-percent growth rate, the domestic hGH market should approach $300 million. Fierce competition from entrenched Genentech (So. San Francisco, CA) and Lilly will be intensified by newcomers Ares-Serono (Geneva, Switzerland) and Novo Nordisk (Bagsvaerd, Denmark). Still, analysts say that rising demand for hGH, leavened with opportunities for indications other than short stature, could bear another major player. With DPM's market recognition and sales force, the company stood to capture a $60 million share.

"Actually our reasons for returning hGH were quite simple," says Tom Preston, who handled the hGH project for DPM (which acquired it from Du Pont, which acquired it along with American Critical Care, which acquired it from BTG). DPM never envisioned the license as a fit; it was, rather a "manageable opportunity," says Preston. The original idea was to target the 400 endocrinologists near major medical centers where DPM already had marketing operations. After Du Pont lost the Orphan Drug race to Lilly, and then lost its petition for co-exclusivity, DPM filed its NDA and settled in to "wait and see."

BTG balked at this plan. They had licensed hGH to other major pharmaceutical companies in Europe and the Far East, with better royalty deals. "BTG wanted more aggressive marketing with more clinical trials for other indications," says Preston. But DPM's burgeoning research budget for central-nervous-system and cardiovascular disease left them strapped for resources. Convinced that it was near breakthroughs with Alzheimer's and hypertension, it opted to stick to its knitting.

Beyond commitment to their own research, DPM had serious doubts about BTG's expansionist agenda. Key scientists were unsure that the U.S. Food and Drug Administration (FDA, Bethesda, MD) would approve hGH for other indications, especially anti-aging. Without these revenues, DPM would depend on the market for "lack of adequate growth hormone secretion," the only FDA-approved indication. The 14,000 clinically diagnosed cases of dwarfism could not support rapid market expansion. Rumors of athletes using hGH as performance enhancers, coupled with the company's sensitivity to association with off-label use of prescription drugs dealt the coupe de grace to DPM's plans for hGH.

BTG's president and chief executive officer, Sim Fass, sees increased physician confidence, more sensitive blood assay methods, and phenotypic diagnosis of deficiency as spurs to flourishing hGH sales. Children below 3 percentile for growth are now diagnosed as hormone deficient, and insurers will pay.

BTG agrees with DPM's suspicions about anti-aging approval, but is convinced that hGH's "anti-wasting" properties will prevail. hGH seems to reverse disease or injury-related atrophy of muscle mass. Clinical trials with cancer patients have begun, and trials for AIDS patients and elderly hip-fracture patients are slated to commence this month. A clinical trial for athletic injuries is also in the offing.

BTG will bankroll these initial trials. Positive results will underwrite either an IPO or another international partner within the next six months to nine months to bring about future NDA filings.

The incentive for BTG to go it alone is high. In their deal with DPM they projected $12 million the first year. Fass estimates an effective marketing team, of twenty to forty reps, could generate $15-$30 million.

After his successes with DPM and their amicable parting of ways, Fass does not discount the partnering route, however. Six major international pharmaceutical companies have expressed interest in developing the U.S. market. "We're in no rush", says Fass, "its nice to be in this position."

—**Stephen M. Edgington**