How to Keep Your Shirt—If You Put It in Genes

The stock prices on Wall Street are one way of comparing the worth of the various companies that now claim to be in the genetic engineering business. Stock prices, however, relate to perceived worth, an evanescent quality that differs from actual worth by the levitational factor known as hype. It is this factor that has helped substantially in getting the new industry off the ground.

The hype factor, well understood to the professionals on Wall Street, often goes unrecognized by small investors, such as the widows and orphans who are left holding the baby when the stock prices collapse. For the latter class of investors, the following advice is humbly offered.

A common route to commercial viability is to produce a product. Although much of the gene splicing industry seems intent on eschewing this well-trampled path to success, signs of a well-defined intent to manufacture something should not be regarded as an outright handicap. Which companies have definite plans to produce products in the United States? To find out, the would-be investor might address himself to the Office of Recombinant DNA Activities at the National Institutes of Health. This office keeps a list of all approved applications to use the recombinant DNA technique on a commercial scale (defined as more than 10 liters), apart from a certain category of experiments that are exempt. Companies not on this list presumably have no production plans that have yet reached the stage of detail required to win NIH approval.

The list, as of 16 March 1981, is as shown. Eli Lilly and Genentech are partners in the production of insulin by various methods; Burns-Biotec Laboratories is a wholly owned subsidiary of Schering-Plough, which has a contract with the European-based firm Biogen to produce interferons. Hoffmann-La Roche has a contract with Genentech to the same end. The volumes of approved projects were not specified after 1980.

—Nicholas Wade

Recombinant DNA: Large-scale proposals approved by NIH as of 16 March 1981.

Sponsor	Gene(s) cloned	Maximum volume in liters	Date of submission	Date approved
Eli Lilly	Human insulin A Human insulin B	150 150	6/8/79	10/5/79
Eli Lilly	Human insulin A Human insulin B	2000 2000	4/2/80	4/7/80
Genentech	Human somatostatin Human insulin A Human insulin B	750 750 750	8/23/79	12/3/79
Genentech	Human growth hormone	750	11/12/79	4/1/80
Genentech	Human somatostatin Human insulin A Human insulin B Human proinsulin Human thymosin alpha 1	750 750 750 750 750	2/15/80	4/9/80
Eli Lilly	Human proinsulin	2000	2/20/80	4/7/80
Eli Lilly and Genentech	Human proinsulin Human insulin A Human insulin B	2000 2000 2000	3/6/80	4/9/80
Burns-Biotec Laboratories	Human leukocyte interferon	750	5/14/80	7/22/80
Genentech	Human growth hormone	750	5/12/80	7/22/80
Genentech	Human leukocyte interferon Human fibroblast interferon	750 750	5/13/80	7/22/80
Genentech	Human leukocyte interferon Human fibroblast interferon	750 750	9/4/80	11/4/80
Burns-Biotec Laboratories	Human leukocyte interferon	750	9/12/80	11/4/80
Burns-Biotec Laboratories	Human leukocyte interferon	750	9/12/80	11/4/80
Genentech	Human leukocyte interferon		12/5/80	2/2/81
Genentech	Bovine growth hormone		12/5/80	2/2/81
Hoffmann-La Roche	Human leukocyte interferon Human fibroblast interferon		12/9/80	2/2/81
Burns-Biotec Laboratories	Human leukocyte interferon		12/10/80	2/20/81
Schering-Plough	Human leukocyte interferon		12/10/80	2/20/81

Novel Help for the Handicapped

A program is under way at the Tufts–New England Medical Center Hospital in which capuchin monkeys are being trained as aides to the severely handicapped. Capuchin monkeys, native to South and Central America, are familiar as the tiny companions of street corner organ grinders.

The program is headed by educational psychologist Mary Joan Willard. Willard, who did postdoctoral work with psychologist B. F. Skinner, came upon the idea of training capuchins as aides to the severely disabled after meeting a quadriplegic and thinking that maybe simians could be of help. She started a pilot program with two monkeys in 1977 and has since obtained grants from the Paralyzed Veterans of America and the National Science Foundation. The capuchins are trained by having them imitate simple actions on command and rewarding them when they do it right. Complex tasks can be performed by training the monkeys in the series of simple actions which are the task's components.

Hellion, a 3-year-old female, is the first monkey to be placed in a quadriplegic's home. She has learned to feed her owner, open, close and lock doors with a key, turn lights on and off, move small objects from one place to another, and take a record from an album cover and place in on the turntable. These tasks are performed on verbal command with the help of a small laser, operated by mouth, to

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