

## review: **G-NETIX: Recreate Mankind**

by Karen Kaye

Type: Bioengineering Simulator

Publisher: ISM (410/560-0973)

Retail Price: \$69.95

Mail Order: \$37.95

Requires: Mac, hard drive, 2 MB RAM for B/W; 4 MB RAM for color.

Protection: None

Recently, there has been an explosion of simulation type games. It is now possible for the typical Macintosh owner to experience "flight" in just about every aircraft ever designed, or take responsibility for the functions of a city, or plan the development of a railroad, or even create life itself and observe its evolution. Software publishers have given us the opportunity to experience all this through computer simulation. These kinds of products seem to simultaneously transcend the traditional roles of both games and education software. G-NETIX is a game in this latter tradition, but it attempts to be unique as opposed to relegating itself to offering a nuance of something already seen.

**It Is ALIVE!** G-NETIX is distributed on four double-density disks, and is a breeze to install. The box also contains an 82-page User's Guide, a 90-page Primer on Genetics, a 10-page "crash-course" on genetics (for the typical Mac user who does not read manuals anyway), as well as a Chromosome Map and Dependencies Chart. Initially this is quite daunting, and while appearances can be deceiving, this is not the case here. The game has an exceptionally steep learning curve, and there is little point in attempting to play without first reading, in order, the "crash course" and the User's Manual.

The premise of the game is not new. A deadly plaque has destroyed all life forms on Earth. The player is cast in the role of a biologist who was sent into space to study genetic engineering before the catastrophe. In another cliché, the player is the only human being in the space-based laboratory, and naturally, the only one who can attempt to repopulate the planet. The object of the game is to detect and correct not only the myriad of mutations that will inevitably occur during this bioengineering project, but to ward off infections and

maintain an ideal environment within the incubation chamber until a healthy human specimen can be generated.

There is little attempt to personalize the game, and since the player is the only one left alive, the only interaction possible is with the equipment. The player can select either the Basic or Advanced Level. The former makes some simplifications and provides the player with more overt clues. The latter requires the completion of an involved testing process on the adult form, in order to determine such imperfections as color blindness. The following game walkthrough is based on the Basic Level. It is important to note that the description contains terminology relating to genetics, and whenever possible a definition has been provided in parenthesis. This format has been chosen to stress the complexity of the game and to provide the reader with an approximation of game play.

The game starts with an animation sequence in which a sperm fertilizes an egg. The player is then shown the Embryo Control Window. The laboratory equipment displays readings from the embryo's environment: temperature, carbon, oxygen, nitrogen, water, electrolyte, glucose, vitamins, amino acids, and PH level. A scanner sweeps the embryo and marks normal mutations as orange dots, while fatal mutations are indicated as red dots. The mouse controls a cross-hair which can be used to identify the future location of the mutation. This is a helpful feature, since at such an early age the embryo does not appear very human.

The player then selects one of the mutations to correct. The repair process starts with a Protein Analysis (proteins are the most abundant of organic compounds found in humans—they have many diverse functions): this will reveal which protein at the target location is abnormal. The abnormal protein is produced by a gene (a piece of DNA that contains important biological information essential for life). In order to correct the gene, its location must first be identified among the 23 pairs of chromosomes (each containing a DNA molecule, into which genes are embedded). The particular chromosome then must be targeted for scrutiny in order repair the damage.

The entire structure of the chromosome is displayed in the Gene Sequencer. Locating the individual gene that needs correction is similar to searching for a needle in a haystack. Fortunately, the technology available to the player allows automated searches for specified DNA sequences. This greatly speeds up the process and prevents most genetic engineers from pulling their respective hair out. It is important to make extensive use of marking labels in order to keep one's place. If the order in the sequence of DNA material is lost, it is reduced to a sea of gibberish.

When the target gene is eventually located, the actual repair process starts. The mutation is first compared with the structure of a healthy gene from the reference library. Differences can be subtle, and precision is paramount. Cloning and splicing (the Mac's Copy and Cut commands) are the primary means to correct the mutated gene. Successful operations result in the elimination of the corresponding mutation when the player returns to Embryo Control Window. There is not time to rest on one's laurels. As the embryo ages, it will no longer be possible to correct deficiencies. At Day 84, the player loses control of the process, and the embryo is force-grown into an adult. The resulting adult can then either be abandoned as a complete failure, or it can be cloned and corrections can be attempted during another 84-day cycle.

[The Autopsy](#). I really expected a SimLife (Maxis) type game when I opened the box. It was not. I also expected to be getting a game I could enjoy. At first I did not. It took several hours to get the feel of this thing that consumed nearly 7 MB of my hard drive. But it gradually became quite fascinating, and a real satisfaction to solve. One thing did become very clear during the initial acquaintance period: the game really needs to have a statement on the

cover to warn the purchaser that this game is probably not for children. The Primer and the User's Guide are clearly written, yet the subject of the game still requires at least some high school level biology. I enlisted the help of a biology major to verify some of the information. The database as well as game sequences received high marks.

Aside from the proletarian opening sequence, the graphics of the game are beautifully drawn. It is playable in B/W, however I preferred to stay with color. The use of animation is limited but well done. Sounds are simple, and there is no music to speak of. Sounds do provide clues at the Advanced Level, which also contains some digitized speech for the testing process. The game does create a good laboratory environment, and avoids the use of annoying background music that most of us turn off anyway.

he controls of the game take some getting used to. Even though most actions are based on familiar cut and paste commands, navigation in the Gene Sequencer can be awkward. Players must be absolutely precise in the placement of the mouse before attempting to clone or splice. The game revolves around a dozen primary player actions. Even though each new game offers a new starting point, and the Advanced Level challenges the reasoning abilities of the player, the gene cloning and splicing actions can become repetitive. It is a matter of perspective: in reality these actions are not the "end" in themselves, but rather a means to an end. Once this realization is reached, the player is ready to focus on the real challenges of the game once again, and the above actions are no longer distractions.

The Advanced Level introduces additional challenges, and the clues become more difficult to

decipher. There are a greater variety of mutations that can occur, and there is also a possibility of infection. While a Basic Level game can easily be completed in one evening, an Advanced Level game will probably take a whole weekend. On both levels, the game continues to be challenging to play, since with each new game the computer offers a new starting condition.

The game appears to be relatively bug-free and stable. It did quit once (Type 1 Error) during the testing process; however, I could never duplicate the problem again. The game and manuals seem to be well-written and edited. The one thing that is desperately lacking is a tutorial, wherein the frustrations of the first few hours could be completely avoided. (ISM is considering including a tutorial in future versions.) Game play could also be improved if all the accompanying material (Chromosome Map, Listing of Protein Analysis, mRNA Sequence List, etc.) were to be included in the software. At present, miscellaneous sheets and charts must be unfolded to a large size. (ISM had considered adding them to the game, but were not ready to release a CD-ROM game yet, which is what the addition of these maps would require.) The whole process gets a little cumbersome.

**The Annex.** ISM publishes a diverse line of products that run the gamut from childrens' education software to a professional presentation-enhancement utility. G-NETIX is not the first product with a medical theme from ISM. They also publish Surgeon 3: The Brain, which comes in color or B/W versions. The focus on the medical profession is not a coincidence: both were designed by Myo Thant, a physician.

**The Verdict.** The game stresses problem-solving and the ability to piece together different visual and audio clues. It is closer to a Sherlock Holmes type mystery than to a mad scientist game. The product is primarily suited for mature audiences, and its target population, by virtue of its subject matter, may indeed be limited. Some audiences may find the simulation of genetic manipulation disturbing, especially the depiction of embryonic development. G-NETIX will reward those who have an interest in the subject matter specifically, or medical topics in general. It should also appeal to those who enjoy solving complex puzzles.

#### Pros.

- Very challenging
- Thoroughly researched
- Good replay value

#### Cons.

- Very complex game without a tutorial
- Requires access to numerous paper manuals and maps
- Single player only
- Limited use of sound or animation
- Ravenous appetite for hard disk space