Rachel Hays
Department Editor

Ames Mutagen Detection. 1995. Microbix Education Systems (4 Richborough Rd., Madison, CT 06443). VHS. 17 min. Purchase: $195, includes laboratory materials.

This video does a very good job of introducing the Ames mutagen detection assay procedure. In addition to the video, laboratory supplies for 30 students and detailed written instructions for the instructor and students are included.

The first part of the video is for the instructor and details their pre-lab preparation. The last approximately eight minutes are for the students. Here they learn that the development of this bioassay using bacteria means that animals do not always need to be used to screen materials for mutagenicity from toxic waste sites, industrial effluents, and pharmaceuticals. The video models, with humor, the process of performing the test. Students test something they bring in, perhaps hair dye, motor oil, cigarette butts, pesticides, herbicides, or household cleaners, for its ability to produce mutations in bacteria. They are even directed to read and review the well-prepared written material that accompanies the lab. The video is short enough that it could be repeated if students did not understand all the material the first time.

The presentation is appropriate for high school but could also be used in an introductory college course.

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Genetics I: Fundamentals of DNA. 1995. Human Relations Media (175 Tompkins Ave., Pleasantville, NY). VHS. 12 min. Purchase: $89.

Don't be misled by the title into thinking that this is just another animation of the structure of a DNA molecule. Excellent photography and video microscopy are used to first set the stage for DNA as the hereditary material by showing that a human zygote with a single nucleus develops into a human, a rabbit zygote becomes a rabbit, and potato cells produce identical potato plants. I would like a little more explanation on the manipulation of the potato apex and the resulting clones. Transplant of a mouse nucleus and the resulting mouse is shown. No mention is made of differentiation and how a rabbit with rabbit DNA in every cell has ears, feet, eyes, etc.

Plant mitosis is clearly shown through time-lapse. It was fitting here to not divert into a discussion of the process and a labeling of stages. I applaud the producer for avoiding that diversion. Part of a chromosome is removed by using micromanipulators. I would like a demonstration of the micromanipulators, but the manipulation shown is impressive.

Karyotypes are shown with the sex chromosomes highlighted. This went by so fast that students would probably not understand the reason for the highlighting. DNA and protein are separated and the DNA spooled onto a glass rod. Selected DNA is inserted into mice where it is expressed. Similar modification of bacteria by insertion of DNA is mentioned. Then we explored the detail of the chromosome through animation and a little electron microscopy. Presentation of the nucleotides seemed slow when set into this fast-paced video. I like the way molecular detail was overlain with a simplified model. The animation was good, but a little choppy when the DNA was rotated. During the discussion of the molecule, the vocabulary jumped from an eighth grade level to that of an upper division science major. "Polymer," "hydrogen-bonds" and "sequencing" are used as though they are as ordinary as "blue" and "round."

This 1992 video produced by Jeulin in France has had the narration converted to English. It is possible that the translation produced a couple of errors in an otherwise clear and accurate presentation. The narrator tells us that all of the DNA is in the nucleus, neglecting the mitochondrial DNA or for some organisms the chloroplast DNA. At another point he tells us that some manipulated "zygotes give birth to large mice," when I think he means that the zygotes develop into large mice. You can easily excuse and correct these errors. Four pencil-and-paper student activity pages, a glossary, a summary, objectives, ideas for extension, and additional suggested references dated 1968 to 1993 accompany the video. The student sheets are designed for grades 8–10, but I believe the video is more appropriate for review after discussion of DNA in introductory college biology. The photography and the choice of material are so nice that I'd like to see the video in easily accessed segments on CD-ROM or videodisc.

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Genetics II: Breaking the Code. 1995. Human Relations Media (175 Tompkins Ave., Pleasantville, NY). VHS. 12 min. Purchase: $89.

This video is not about discovering that the DNA codon TTT specifies the amino acid lysine or that AGU specifies the amino acid serine. What is explored is how the genetic information stored in DNA in the nucleus is translated into protein in the cytoplasm. This exploration is done without detailing the involvement of enzymes and ATP and without editing the messenger RNA.

Rachel Hays is the editor of the Audio Visual Reviews section of *ABT*. She holds a Ph.D. in botany from the University of California, Davis, and has taught courses at the college level. With a B.S. from San Diego State University, Hays went on to the University of California, Davis, for her M.S. degree. For several years, Hays has done research for the Natural Resources Ecology Laboratory at Fort Collins, CO, studying nutrient cycling and soil organisms. She has published articles in several popular and scientific periodicals. Her address is: **6921 Buckhorn Ct., Loveland, CO 80537**.