Science Briefs

Marijuana may fight cancer

NEW YORK (AP) — Marijuana-like drugs eradicated some brain cancers in rats and helped other animals live longer, possibly hinting at a new approach for treating the disease, researchers said.

Brain cancer experts said they aren't impressed.

The study dealt with gliomas, the most common category of cancer arising in the brain. Gliomas are highly lethal in people despite treatment with drugs, surgery and radiation.

The rat study was published in the March issue of the journal Nature Medicine. It was conducted by scientists at the Complutense and Autonoma universities in Madrid, Spain.

They injected glioma cells into the brains of rats to produce tumors. Untreated rats died within 18 days.

Other rats were treated with drug infusions for seven days through a tube leading to the tumor. Fifteen rats got infusions of THC, the main active component in marijuana. Tumors disappeared in three animals, and nine other rats outlived the untreated ones, surviving up to 35 days.

When researchers used a different but similar drug, five of 15 rats became tumor-free and four others outlived untreated animals, the researchers said.

Dr. Philip Gutin, chief of neurosurgery at the Memorial Sloan-Kettering Cancer Center in New York, said other experimental therapies work better in rats. And the paper doesn't demonstrate that the effect came from the drugs rather than simply the infusion of liquid into the brain, he said.

Dr. Rolf Barth, who studies brain tumors at Ohio State University, called the work interesting. But he said the type of glioma cells used to create the tumors does not provide a very good mimic of the human disease.

Kidney treatment shows hope

NEW YORK (AP) — A vaccine-like treatment wiped out or shrank tumors in some patients whose kidney cancer had spread elsewhere in their bodies, researchers said.

Experts called the results striking but cautioned that the preliminary study of only 17 patients would have to be confirmed by further work.

Tumors disappeared in four patients and shrank by more than half in two others, researchers from the University of Goettingen in Germany and elsewhere reported in the March issue of the journal Nature Medicine.

Cancer that has spread from the kidney is notoriously difficult to treat, and doctors often turn to experimental therapies.

In the new study, tumors in the lung, bones, lymph nodes and elsewhere disappeared.

The German research was aimed at revving up the immune system to attack tumors, much as an ordinary *vaccine prime*s the body to fight off germs. The study used blood cells called dendritic cells, which normally trigger an immune attack by presenting other blood cells with bits of a target germ.

The scientists fused millions of tumor cells from each patient to dendritic cells from donors, then injected the hybrid cells back into the patient. These hybrids could then alert the immune system by displaying bits of the patient's tumor.

Initially, patients were injected with the vaccine twice, six weeks apart. Those whose disease didn't progress continued to get boosters every three months. No serious side effects appeared.

In three of the four patients whose tumors disappeared, it happened within the first 12 weeks, the researchers reported.

Rescuing the Prairie Chicken

Scientists apply genetic engineering to save endangered birds

BY YOLANDA LUKASZEWSKI
The Battalion

Some would call it a super chicken.

It lays eggs. It tastes good. And now the common White Leghorn Chicken has the potential to repopulate an endangered bird species.

Researchers at Texas A&M University are using the White Leghorn Chicken as a surrogate to produce chimeras of endangered Attwater's Prairie Chickens.

A chimera is an animal with tissues from another species. In this case, the White Leghorn Chicken would have sex cells from the Attwater's Prairie Chicken.

By doing this, they hope to slow the decline in the endangered Attwater's Prairie Chicken population.

The team of researchers led by Dr. Luc Berghman, assistant professor of Poultry Science, includes Dr. Billy Hargis, Dr. Mark Westhusin, and Dr. Ian Tizard, all professors of veterinary medicine. Tizard also holds the endowed Schubot chair for Exotic Bird Health.

The researchers plan to harvest primordial germ cells — cells that ultimately become sperm cells in males and eggs in females — from Prairie Chicken blood.

Those cells would then be inserted into the White Leghorn Chicken.

The first generation born to the Leghorn, the chimera, would look like the Leghorn.

The second generation would be Attwater's Prairie Chickens. Siblings from two parents would be genetically similar, but not identical.

Primordial germ cells would also be maintained in culture, Berghman said, theoretically creating an unlimited number of donor primordial germ cells.

The researchers chose White Leghorn Chickens to serve as surrogates to the Prairie Chicken because they are "laying machines," according to Berghman. The Leghorns can lay more than 300 eggs per year.

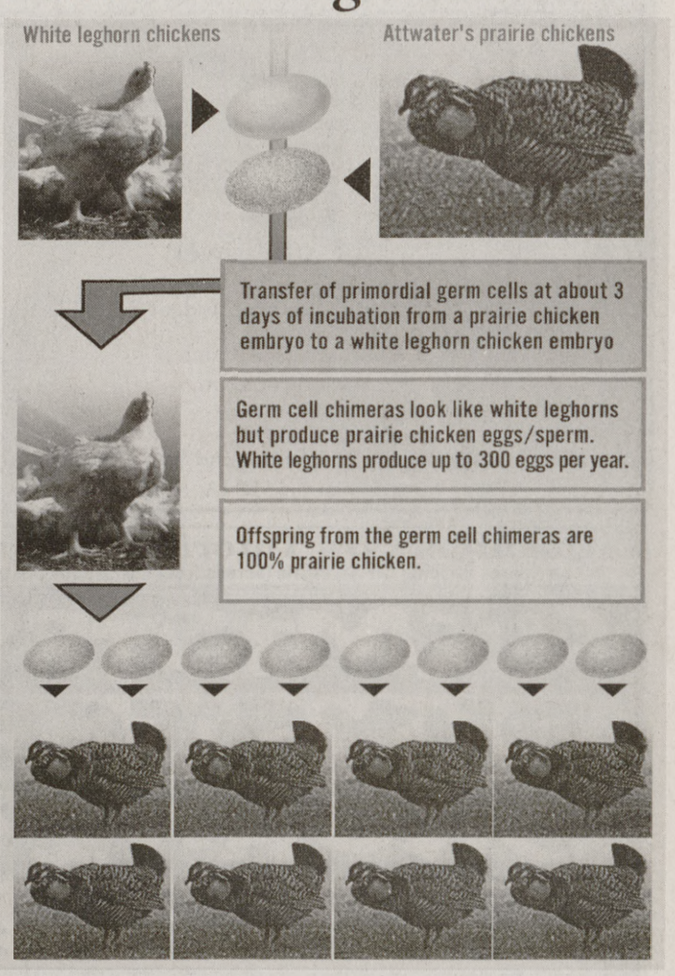
"They are wonderful animals," Hargis said. "They're tough animals and they're resistant to environmental stress."

Gary Varner, A&M associate professor of philosophy, said that some types of animal research should be endorsed, provided that scientists treat the animal with dignity during all phases of such research.

"This project sounds attractive from a wider range of perspectives than simply enhancing agricultural productivity," Varner said. "Insofar as animal rights or animal welfare are concerns, saving an endangered species sounds more like the kind of goal that would justify invasive research on sentient animals than merely increasing farmers' profits or lowering consumers' costs."

Determining if the White Leghorn Chicken can carry the Attwater's Prairie Chicken to term will be a hurdle in the project, Berghman said.

(above) **Dr. Luc Berghman**, assistant professor in Poultry Science, leads a team of A&M veterinary researchers to genetically engineer endangered bird reproduction using chimeras.



(right) The chimera development process, using White Leghorn Chickens to produce Prairie Chickens.

PHOTO BY SUSAN REDDING GRAPHIC BY ROBERT HYNECEK/THE BATTALION

"We'll have to look at how the machinery of the Leghorn donates yolk to the oocyte," Berghman said. The oocyte is an immature egg. The researchers do not know if nutrients that the Leghorn provides its own offspring will be adequate for the Attwater's Prairie Chicken.

> ***"Saving an endangered species sounds more like the kind of goal that would justify invasive research."***
>
> — Dr. Gary Varner
> animal research ethics expert

In Texas, Attwater's Prairie Chicken can be found in only three counties, according to the National Wildlife Foundation. The environmental group estimates that 56 birds live in the wild, and another 200 birds reside in captive breeding programs.

With such a small number of prairie chickens, the genetic pool shrinks. Subsequent reproduction leads to inbreeding.

Berghman and Hargis admitted that their project will not improve the population's genetic diversity.

"This project could tremendously delay inbreeding," Hargis said. It would maintain the genetic line of birds that do not frequently reproduce, and maximize the potential for all of the Attwater's Prairie Chickens to reproduce, Hargis said.

Before they attempt to create chimeras of Attwater's Prairie Chickens, they will test their proposed method on a more abundant bird in the same family, the pheasant.

If the project is successful with Attwater's Prairie Chickens, then the researchers will try to produce chimeras of other endangered bird species.

"If we can do this with the chicken as the recipient, then we can find other domestic species that are larger, perhaps a goose or turkey, that can be used for artificial production of whooping cranes," said Hargis.

Whooping cranes are another endangered bird.

Berghman and Hargis are optimistic about the project. "It could be another contribution of poultry to the world if chickens can be used to repopulate some wild species of birds," Hargis said.