

## SCIENTISTS TRY TO MATCH RODENT RESULTS IN TESTING CHEMICALS

From U.S. Department of Health  
& Human Services

■(WASHINGTON) If you love horse races, you'll appreciate an international collaboration in which groups of scientists are trying to predict whether 30 chemicals cause cancer — before the results are in from a series of standard tests in rats and mice.

The effort is sponsored by the National Institute of Environmental Health Sciences, one of the federal National Institutes of Health, to stimulate a search for cheaper and faster tests that could help it catch up with some of the 100,000 chemicals estimated to be in use in the world. While it has been called "Beat the Mouse," its formal title is the Predictive Toxicology Evaluation Experiment.

In the current supplement of the NIEHS journal, "Environmental Health Perspectives," the participating scientists are making predictions of carcinogenicity using methods they hope will prove to be useful alternatives or supplements to the standard tests of the federal National Toxicology Program, which rely on dosing both mice and rats for as long as two years. The scientists are predicting the results of 30 of these NTP rodent tests for carcinogenesis by using computer machine-learning, comparisons of the test substances' molecular structures with those of known carcinogens, tissue or cell-culture tests, including the Ames test for mutagenicity, and logic and educated guesses made by experts.

The scientists in this evaluation experiment may help answer the question: Can chemicals be tested faster, cheaper and accurately, using fewer or no rats and mice?

"The answer is important because we need information on more chemicals in our environment than we can get using the standard tests," Kenneth Olden, Ph.D., director of both the NIEHS and the National Toxicology Program, said. "A two-year rodent exposure study actually can require five years to reach final conclusions when you add in the planning time and the extensive analysis of results. It can cost \$2-4 million. So we can't currently do nearly enough tests — when you consider that there are thousands of chemicals which we swallow as drugs, use as pesticides and cleaners, and breathe, drink or eat.

"We need accurate methods that are shorter, cheaper and quicker."

As a result, NIEHS capitalized on the testing being performed by NTP and invited scientists to look at the same chemicals us-

ing whatever method they thought promising — and to publish their predictions of their potential to cause cancer before the final results from standard testing are in.

The resulting predictive papers fill more than a hundred pages of the NIEHS journal supplement volume 104.

Final results from some of the standard, two-year bioassays are beginning to come out, but not enough to indicate which predictive approaches worked best. But the purpose is not winning so much as "focusing the intellectual resources of different research groups on a common problem," NIEHS' Douglas W. Bristol, Joseph T. Wachman and Arnold Greenwell write in an introduction to the journal. They, along with NIEHS carcinogenesis and mutagenesis lab chief Ray Tennant, shepherded the effort. (In another effort, Tennant and others are deter-

mining if two lines of transgenic mice — mice which have been given a human gene implicated in many human cancers, will provide accurate results in six months of tests, rather than the conventional 24.)

The organizers acknowledge that when the results of the conventional two-year tests are in, researchers may initially check to see how accurate their predictions were.

But Bristol said the more important questions will follow: Can we adjust our methods to make our predictions 100 percent? Did we get the right answers for correct reasons? What can we learn by comparing our results, and reasons, with the different approaches of Ashby, Benigni or Moriguchi?

When the results of the 30 NTP bioassays are completed, a final tally will be prepared for a subsequent journal, Bristol, Wachman and Greenwell said.

## FAA OFFERS GUIDANCE AGAINST PASSENGER MISCONDUCT

Federal Aviation Administration

■(WASHINGTON) To protect the safety of the flying public and flight crews, the Federal Aviation Administration is issuing additional guidance to airlines to help guard against passenger misconduct aboard aircraft. Federal Aviation Regulations prohibit passengers from assaulting, threatening, intimidating or interfering with crewmembers or their duties.

"We will not tolerate any interference with the vital safety functions performed by crewmembers," said FAA Acting Administrator Linda Hall Daschle. "The FAA's actions will help achieve the goal of providing travelers with a safe aircraft environment."

Working with representatives from flight attendant unions, airlines and others, the FAA's guidance, issued as an advisory circular, contains examples for managing and reducing instances of passenger interference with crewmembers. The agency recommends that air carriers take these steps to manage passenger misconduct:

- form employee, government and law enforcement partnerships to develop procedures for handling violence and providing assistance to victims;
- clearly communicate to employees the course of action to be taken;
- establish policies that define a zero tolerance philosophy toward passenger misconduct;
- inform the public about the seriousness of passenger misconduct and emphasize the

consequences such as fines and incarceration;

- encourage employees to report cases of misconduct and provide information on how to file complaints;
- provide information to employees about company liaisons to law enforcement and the FAA; and
- provide training to crewmembers on handling conflict situations.

Passenger misconduct may warrant a response from local law enforcement or the Federal Bureau of Investigation and can result in imprisonment. Reports forwarded to the FAA can result in joint investigative efforts by the agency and FBI. Cases that the FBI declines to investigate still will be pursued by the FAA and could result in a substantial fine.

Additional federal regulations to guard against passenger misconduct include: prohibiting the boarding of passengers or serving alcohol to passengers who appear to be intoxicated; requiring that passengers obey information signs, such as "no smoking" and "fasten seat belts"; and requiring that passengers obey the instructions of the crewmembers regarding compliance with these signs.

*"Whisky drowns some troubles and floats a lot more."*

*Robert C. Edwards*