



MIKE OTTO

HIV BREAKTHROUGH Dr Barr and colleagues have discovered the human gene TRIM22, which stops HIV from spreading.

Discovery helps make significant advances in HIV research—Barr

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Dr James Smiley, a Canada Research Chair in Molecular Virology and a professor at the U of A who operates the lab in which Barr worked, is enthusiastic about the impact these findings will have on the HIV field and what they will mean for the University's reputation.

"These types of discoveries help to solidify and enhance the U of A's profile in the area of infection and immunity," Smiley said, adding that "the

U of A provides an environment where talented post-doctoral fellows such as Steve Barr can pursue their research in any area that they choose."

Barr, who began his work in Smiley's lab over two years ago, will next turn his attention to what he says are the two major outstanding questions from his research: how exactly TRIM22 interferes with HIV assembly and why this gene doesn't appear to work in people infected with HIV.

With approximately 33 million people worldwide reported to be living with HIV and 2 million deaths caused each year by HIV/AIDS, Barr expects that his research will provide hope to those living with the so-far incurable disease.

With emerging drug-resistant strains and failed vaccine trials, Barr said, "there's been a real dark cloud put over HIV research fairly recently." However, he added that "we are making significant advances."

Researcher discusses how amphibians can help understand public health issues

VICTOR VARGAS
Online Coordinator

For 48 years the pesticide atrazine has been widely used in crops throughout the world—but recent scientific studies about the product's adverse effects have caused biologist Dr Tyrone Hayes from the University of California to advocate against its use.

Hayes was on campus last Thursday and Friday to give guest lectures about his research on how atrazine affects frogs in the environment. Since he began his studies, Hayes has become one of the leading experts on atrazine and recently testified in front of a US Senate committee about its effects.

His research has found that the chemical causes a hormonal imbalance in frogs by converting testosterone into estrogen. This causes frogs to take on female characteristics, effectively preventing them from reproducing. Hayes believes that humans are being affected by atrazine because of how the frogs have the chemical enter their system.

"The bigger concern is that frogs are getting it through the water, which is the same water we are taking in at levels that we know are biologically effective. And what is worse is the people who are most affected are taking it at much higher levels—the agriculture workers and the company factory workers," Hayes explained.

Since frogs and humans have the same hormonal system, Hayes believes that humans are being affected by the chemical in similar ways. The change in hormones, as Hayes has shown in other research papers, has been known

to cause infertility, and Atrazine also acts as a carcinogen.

"The exact same estrogen that regulates female development in these frogs is the same estrogen that regulates the menstrual period of every woman in this room. The hormones are exactly the same," he said.

"The effects manifest themselves differently. In the case of amphibians and fish, you get a sex reversal. In the case of humans, you have a loss of fertility and prostate and breast cancer."

TYRON HAYES
UNIVERSITY OF CALIFORNIA BIOLOGIST

While Hayes' research shows that the pesticide is harmful, Syngenta Corp, the company that produces the pesticide, along with the United States Environmental Protection Agency (EPA), maintains that the chemical is within safety limits.

According to the Syngenta Corp website, "More than 200 of these studies have been completed since 1995, ensuring that atrazine has passed the most up-to-date scientific tests and reviews. Overwhelmingly, the body of research supports the safety of atrazine to humans and the environment."

However, Hayes stands by his research and insists that the majority of his work, including some of the studies that Syngenta Corp and the

EPA cite, show the consequences of the drug. It's for this reason that Hayes stresses that the scientific community must strive to educate the public about the issue.

"Scientists, I think, can't afford to be neutral," he said.

"If we're the ones with the information, we're the ones that can explain how this chemical works and what the implications are and what the problems will be for wildlife and humans [and] what the problems are. We should be the ones to present that information so that the public and legislators can make informed decisions."

Linnea Mowat, a second-year masters student in biological sciences, agrees with Hayes' position that scientists should take a more active role in educating the public. Otherwise, she says, people will be unable to understand the complicated science behind certain issues.

"There is so much information, people don't know what information they should be interested in anymore. And with media sources coming up with certain information and scientific communities coming up with certain information, it's hard to know who to listen to," Mowat said.

She added that unless scientists go out and speak out on what's being shown by science instead of letting industry speak for them, people will be unable to make informed decisions.

"If the public community doesn't know what the true story is, it's hard to choose which side you're going to believe because [each side] is presented as fact."

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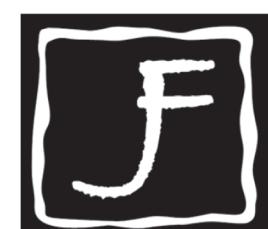
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