U of M researchers discover new method to combat HIV

Researchers at the University of Minnesota's Center for Drug Design have developed a new method to combat HIV/AIDS, potentially replacing the traditional cocktail drug approach.

The new approach – proven accurate in lab tests – merges the features of two antiviral agents into one drug, achieving the same effect as when two or more drugs are taken separately. The cocktail approach most commonly prescribed to HIV-infected patients is expensive and high in toxicity because many drugs are taken at one time.

The researchers named the new concept Portmanteau Inhibitors, and the results were published in a July 4 issue of the *Journal of Medicinal Chemistry*. The principal researcher is Robert Vince, Ph.D., director of the center and a professor of medicinal chemistry in the College of Pharmacy.

"It's one drug that does the same thing as two independent drugs would do," Vince said. "It's a new approach in HIV/AIDS treatment."

Besides remedying cost and toxicity problems, a Portmanteau Inhibitor is less likely to develop resistance from the virus because of its multifaceted approach. Most importantly, research found that the separate components of the drug did not interfere with each other while attacking HIV.

"One drug is not durable. It develops resistance very quickly," said Zhenqiang Wang, Ph.D., a researcher in the Center for Drug Design, and co-investigator of the research. "This makes it much more difficult for resistance to develop."

The next step will be more research and testing to see how the drug reacts once distributed in the body. But, preliminary research and confirmation of the new concept shows promise because the quality of life for AIDS patients hinges on low costing medication and minimal side effects, Wang said.

"It's huge," he said. "This concept could lead to a replacement for the cocktail treatment."

Source: University of Minnesota