

DNA findings hold potential for cancer treatment

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(Medical Xpress)—Six years ago, Boise State University biology professor Greg Hampikian and computer science colleague Tim Andersen announced that they had identified tiny DNA and protein sequences that were absent in nature. Hampikian termed these sequences 'nullomers' and a headline in the *New Scientist* magazine proclaimed the sequences as "DNA Too Dangerous to Exist."

The researchers proposed that these sequences could have properties that were incompatible with life, and might serve as drugs to kill pathogens and even cancer. New research findings suggest this may be true.

The October issue of the online journal *Peptides* will publish the first results of nullomer-based drugs. They show that these compounds kill breast and [prostate cancer cells](#) in the laboratory. More significantly, while their lethal effects on cancer cells increase over time, nullomer effects on normal cells decrease over time.

"We have a long way to go, but we finally have proof that nullomers have biological effects that can benefit human health," Hampikian said.

Hampikian is known internationally for his work in [DNA forensics](#), and he played a key role in the exoneration of Amanda Knox, the American college student convicted of the 2007 murder of her roommate in Perugia, Italy. In his Boise State lab, Hampikian and student and faculty collaborators work on diverse DNA projects, including developing new cancer drugs, discovering new species of single-celled organisms in

Idaho, studying Basque [sex chromosomes](#) and inventing micro devices.

"Boise State researchers are targeting issues that positively impact the lives of Boise residents, as well as citizens of the world," said Boise State President Bob Kustra. "This is one more example of how our faculty are continuing to make major strides in areas as diverse as biomolecular science, [novel materials](#), health and public policy, raptor studies, economic development and school improvement."

More information: Hampikian's article can be viewed online at [www.sciencedirect.com/science/ ... ii/S0196978112004044](http://www.sciencedirect.com/science/.../ii/S0196978112004044)

Provided by Boise State University

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