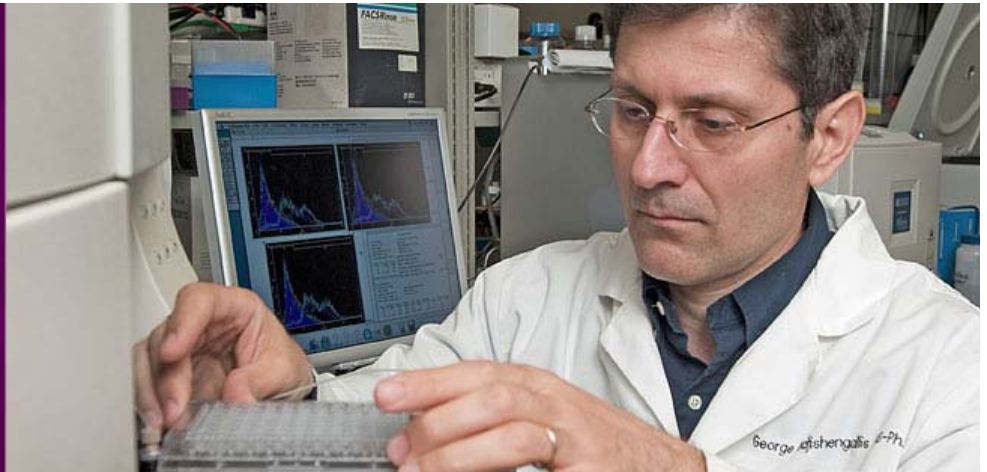


School of Dentistry

Researchers discover how bacteria sabotages natural immune defense

Cutting-edge research

Our faculty are changing lives not only in our classrooms, but also in our labs.



Researchers at the University of Louisville want to know whether AMD3100, a drug developed to combat HIV can help also control periodontal disease, a chronic inflammatory disease of the gums.

To help answer this question, the National Institutes of Health (NIH) has awarded \$1.7 million to UofL School of Dentistry researcher George Hajishengallis and his team. Hajishengallis will use the funds to build upon a recent discovery that found how certain bacteria can sabotage a cell's ability to fight off infection.

Hajishengallis and his team have been studying *P.gingivalis*--the primary bacteria behind periodontal disease—and how it causes confusion in human cells by introducing “cross talk” between cell receptors that typically function independent of each other. The cross talk slows down the cell's ability to fight the bacteria enabling the bacteria to flourish, which can lead to bigger problems like gum or heart disease.

“After making this discovery, we utilized a drug called AMD3100, originally used against the HIV virus. The drug blocks a receptor that both HIV and *P.gingivalis* like to exploit. We discovered the drug neutralizes the ability of *P. gingivalis* to instigate inter-receptor “cross talk” and helps the immune system function effectively to kill *P.gingivalis*,” said Hajishengallis.

The UofL researchers will use a \$1.7 million grant to study whether AMD3100 is effective in preventing periodontal disease in mice. If so, it could mean a future treatment for those suffering from gum disease.