

# Development of non-natural flavanones as antimicrobial agents

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As microbes grow increasingly resistant to existing antibiotics, scientists are looking in new directions for drug development. A new paper, published Oct. 19 in the online journal *PLoS ONE*, reports the synthesis and testing of a family of potential antimicrobial molecules and finds that their therapeutic effect is comparable to that of many currently used antimicrobial agents.

Most of the compounds showed broad activity against a variety of bacteria and fungi, but were not toxic to [mammalian cells](#), and thus potentially open a new avenue for the development of novel antimicrobial treatments.

The team, led by Professor Mattheos Koffas of Rensselaer Polytechnic Institute and Professor John Panepinto of the University at Buffalo, focused on compounds related to flavonoids, which are molecules naturally found in many plants that have been suggested to have various positive health effects.

Rather than limiting themselves to these existing compounds, however, the researchers synthesized a variety of related molecules to see if they could generate a product with improved [antibiotic activity](#).

They found that many of these novel molecules were effective against bacterial species such as the gram-negative *E. coli* and the gram-positive *B. subtilis*, as well as the [fungal pathogens](#) *A. fumigatus* and *C. neoformans*. According to lead scientist, Dr. Koffas, "plant polyphenols

have been explored heavily for their strong antioxidant properties and very little is known about other health benefits they may have. Our work clearly demonstrates their potential as a vast untapped source of valuable antimicrobial agents."

One particular compound showed especially promising activity and is likely to be the subject of further work toward the development of new antimicrobial treatments. In addition, the investigators are currently generating a much wider array of compounds in order to identify more compounds with even more potent [antimicrobial properties](#).

**More information:** Fowler ZL, Shah K, Panepinto JC, Jacobs A, Koffas MAG (2011) Development of Non-Natural Flavanones as Antimicrobial Agents. PLoS ONE 6(10):e25681.  
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