

# APPLIED MICROBIOLOGY, ANTIBIOTICS, ANTIMICROBIALS AND BENEFICIAL MICROBES

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## Development of a vegetable oil derived furan fatty acid as a potential candidate for antibacterial agent against multidrug-resistant *staphylococcus aureus*

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Hydroxy fatty acids, which were produced by structural modification of natural lipids by biocatalysis, can change lipids own properties or even create novel functionalities. They can be produced from the microbial bioconversion of natural vegetable oils. Recently 7,10-Dihydroxy-8(E)-Octadecenoic Acid (DOD) was produced with high yield from olive oil containing oleic acid by bacterial strain *Pseudomonas aeruginosa* PR3, and further study confirmed that DOD contained strong antimicrobial activities against broad range of microorganisms. In this study we tried to modify DOD molecules by physical reaction to create new functionality or to enhance the antimicrobial activity of DOD. After the harsh heat-treatment, a novel furan fatty acid (EODA) was produced from DOD. We confirmed that EODA presented strong antibacterial activity against multidrug-resistant *Staphylococcus aureus* and also EODA showed a recuperative effect of the beta-lactam antibiotics activity against methicillin-resistant *Staphylococcus aureus*.

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