

Antimicrobials, Multiple Drug Resistance & Antibiotics Resistance

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7, 10-epoxy octadeca 7,9-dienoic acid: Potential candidate for antibacterial agent against multidrug-resistant *Staphylococcus aureus*

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Structural modification of natural lipids by biocatalysis can change their properties or even create novel functionalities. Hydroxy fatty acid, one of oxylipins, 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 multi drug-resistant *Staphylococcus aureus* and also EODA showed a recuperative effect of the b-lactam antibiotics activity against methicillin-resistant *Staphylococcus aureus*.

Biography

Hak-Ryul Kim has completed his PhD from Auburn University in Auburn, Alabama and Postdoctoral studies from University of Maryland, School of Pharmacy in Baltimore, Maryland. He is a Professor and Chairman of School of Food Science and Biotechnology, Kyungpook National University in Daegu Korea. He has published more than 65 papers in reputed journals and has been serving as a Board Member of the International Society of Biocatalysis and Agricultural Biotechnology.

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