World Science Leaders' Seminar

ワールドサイエンスリーダーズセミナー

Chemical and biological aspects of oxidized lipids: tracing the fate of lipid hydroperoxides by mass spectrometry

Guest Speaker

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Fri. August 28
13:00 -14:30

Room 411 in Medical Gakugun-to 4A Building
医学学群棟 4A 411

Lipids can be oxidized by enzymatic and non-enzymatic mechanisms to generate an extensive number of modified products. These products are especially increased in disease states. Our laboratory has been working towards the characterization of oxidized lipid products, in particular hydroperoxides and its reactions mechanisms in biological system. Our major goals are to understand how lipids and its oxidized products can affect specific proteins; to develop and apply specific and sensitive oxy-lipidomics approaches for the quantification of signature oxidized lipid products formed during disease states; and to characterize and identify new lipid targets with potential therapeutic application. Using 18-oxygen tracer studies we have demonstrated the generation of singlet molecular oxygen from different classes of lipid-derived hyroperoxides. Cholesterol oxidation mechanisms involving singlet oxygen revealed the production of an aldehyde derivative previously found to be specific for ozone oxidation. Currently we are focused on understanding the biological significance of cholesterol derived aldehydes and hydroperoxides in amyotrophic lateral sclerosis.

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Environmental Biology Laboratory
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This seminar will be held as a part of the class
" World Science Leaders' Seminar" in Human Biology Program

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