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ONLINE ISSN : 1881-3984

PRINT ISSN : 1344-6606

Food Science and Technology Research

Vol. 10 (2004) , No. 4 pp.374-382



[\[PDF \(1077K\)\]](#) [\[References\]](#)

Antioxidative Properties of Extracts from Ancient Rice Brans

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(Received: November 7, 2003)

(Accepted: July 12, 2004)

In this study, the superoxide dismutase (SOD)-like activity and the ROS (superoxide anion, hydroxyl radical, singlet oxygen, *t*-butylperoxyl radical) scavenging activities were evaluated for the extracts from 2 varieties (black and red rices) of ancient rice brans (8 types) by the nitro-blue tetrazolium (NBT) and ESR-spin trapping methods. All the extracts from ancient rice brans (black and red rice) had SOD-like activity, which was stronger than those from present-day rice brans (Koshihikari, Akitakomachi, Haenuki). It was proven by NBT method that the activities of ancient rice brans were significantly stronger than those of L-ascorbic acid, however, L-ascorbic acid exhibited higher scavenging activity as evaluated by ESR spin-trap method. The ancient rice brans have remarkably strong ROS scavenging activities compared with those of the present-day rice brans (Koshihikari, etc.). The ROS scavenging activities and SOD-like activities of the extracts varied depending on the rice species and the planting region. In addition, the extracts from ancient rice brans inhibited the Maillard reaction, which is known to be involved in physiological aging processes. Thus, the present results suggest the utility of the extracts from ancient rice brans as antioxidative materials.

Keywords: [ancient rice](#), [antioxidative activity](#), [SOD-like activity](#), [reactive oxygen species](#), [scavenging activity](#), [Maillard reaction](#)

To cite this article:

Antioxidative Properties of Extracts from Ancient Rice Brans Isao KANEDA,
Kazuhiro IWAI, Hiroyuki KUBO and Hiromu SAKURAI, *FSTR*. Vol. **10**, 374-382.
(2004) .

doi:10.3136/fstr.10.374

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