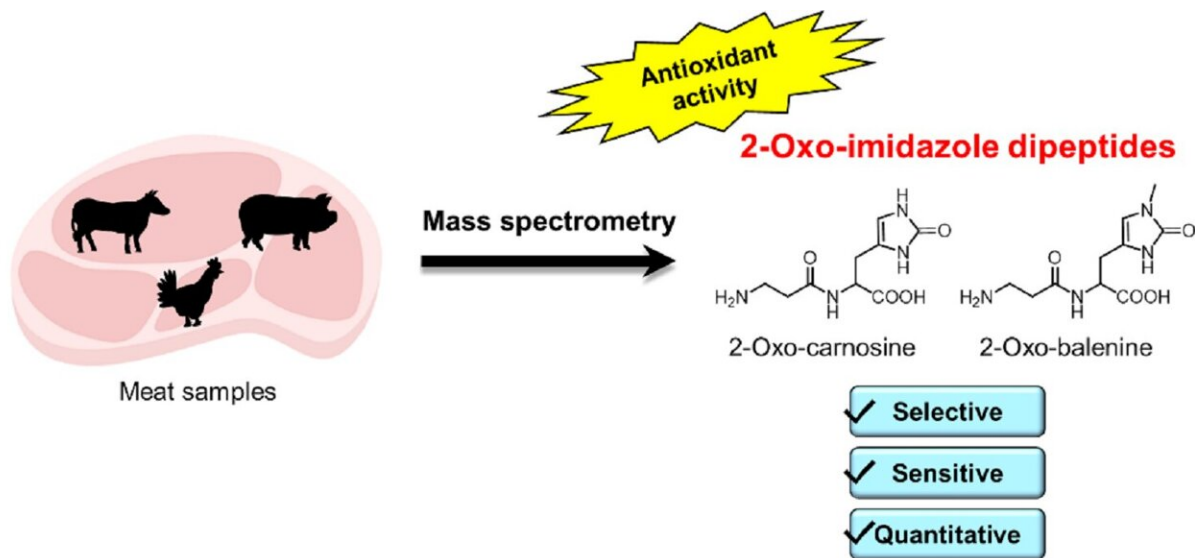


# New antioxidants found in beef, chicken and pork

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Osaka Metropolitan University researchers developed a new protocol for selective and highly sensitive detection, discovering five types of 2-oxo-imidazole-containing dipeptides(2-oxo-IDPs) using mass spectrometry. The 2-oxo-IDPs, present in living organisms, exhibit very high antioxidant activity, and were found to be abundant in meat including, beef, pork, and chicken. Credit: Hideshi Ihara, Osaka Metropolitan University

Imidazole dipeptides (IDPs), which are abundant in meat and fish, are substances produced in the bodies of various animals, including humans, and have been reported to be effective in relieving fatigue and preventing dementia. However, the physiological mechanism by which

IDPs exhibit these activities had not been previously determined.

A research team, led by Professor Hideshi Ihara from the Osaka Metropolitan University Graduate School of Science, was the first to discover 2-oxo-imidazole-containing dipeptides (2-oxo-IDPs)—which have one more [oxygen atom](#) than normal IDPs—and found that they are the most common variety of IDPs derivatives in the body. The researchers also found that they have remarkably high antioxidant activity.

In their study, the researchers established a method for selective and highly sensitive detection of five types of 2-oxo-IDPs using [mass spectrometry](#), which enables quantitative detection of trace 2-oxo-IDPs in living organisms. Using this method, they revealed for the first time that beef, pork, chicken and other meats contain antioxidants, not only IDPs but a variety of different 2-oxo-IDPs. Their findings were published in *Antioxidants*.

"We hope that this research method, which enables advanced analysis of 2-oxo-IDPs, will be applied not only to basic biology but also to medicine, [agriculture](#), and pharmacy, where it will help improve peoples' health and prevent diseases," concluded Professor Ihara.

**More information:** Somei Komae et al, Quantitative Determination of 2-Oxo-Imidazole-Containing Dipeptides by High-Performance Liquid Chromatography/Tandem Mass Spectrometry, *Antioxidants* (2022). [DOI: 10.3390/antiox11122401](https://doi.org/10.3390/antiox11122401)

Provided by Osaka Metropolitan University

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