

Keywords: Digestion, absorption, bioactive compounds, polyphenols, carotenoids

### Recent research topics

## Table olive processing methods for preservation of bioactive compounds

Kagawa prefecture is the largest producer of olives in Japan.

Olive fruits contain important bioactive compounds such as the oleuropein aglycones 3,4-DHPEA-EA and 3,4-DHPEA-EA, which have strong antiallergic effects in addition to their antioxidant properties. However, most of those bioactive compounds are lost with the intensive chemical treatment and rinsing during the process to make table olives.

We are studying methods to improve the stability of bioactives in table olives, while reducing the environmental impact of the process by reducing the use of water.

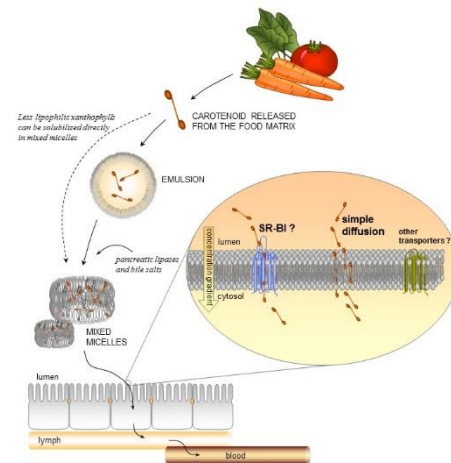


## Digestion and absorption of carotenoids

Carotenoids are red, orange and yellow pigments that are radical scavengers, antioxidants and have an important role in the prevention of cancer, cardiovascular diseases and age-related macular degeneration.

Carotenoids are liposoluble but poorly absorbed. Only 10-20% of the ingested amount is actually absorbed.

We are investigating the effect of dietary factors that can improve the absorption of carotenoids.



## Selected publications

- S. Kano, H. Komada, L. Yonekura, A. Sato, H. Nishiwaki and H. Tamura, Absorption, Metabolism, and Excretion by Freely Moving Rats of 3,4-DHPEA-EDA and Related Polyphenols from Olive Fruits (*Olea europaea*), *Journal of Nutrition and Metabolism*, 2016. <http://dx.doi.org/10.1155/2016/9104208>
- Yonekura, L.; Nagao, A., Intestinal absorption of dietary carotenoids. *Molecular Nutrition & Food Research* 2007, **51** (1), 107-15. <http://dx.doi.org/10.1002/mnfr.200600145>
- E. Kotake-Nara, L. Yonekura and A. Nagao, Glyceroglycolipids Affect Uptake of Carotenoids Solubilized in Mixed Micelles by Human Intestinal Caco-2 Cells, *Lipids*, 2015, **50**, 847-860. <http://dx.doi.org/10.1007/s11745-015-4033-9>
- Yonekura, L.; Kobayashi, M.; Terasaki, M.; Nagao, A., Keto-Carotenoids Are the Major Metabolites of Dietary Lutein and Fucoxanthin in Mouse Tissues. *Journal of Nutrition* 2010, **140**(10), 1824-31. . <http://dx.doi.org/10.3945/jn.110.126466>