

Functionality of natural pigments in food products

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Foods contain various natural pigment components such as anthocyanins and carotenoids. These pigment components show various physiological functions such as anti-oxidation, anti-cancer, and anti-obesity activity. In this presentation, I introduce the functionality about new apple cultivars rich in anthocyanins and paprika rich in carotenoids.

Kurenai no Yume, literally “crimson dream”, is a red flesh apple cultivar developed by Hirosaki University. This apple is sweet, mildly tart, rich in anthocyanin, and delicious fresh or cooked. Its natural red color remains distinct even after cooking, making it excellent for the creation of richly colored apple products. It showed high anti-oxidant activity. Further, this apple extracts showed inhibitory effect of α -glucosidase and ameliorated blood glucose up-regulation in animal experiment¹⁾.

Paprika (*Capsicum annuum*) contain various carotenoids such as capsanthin, capsorubin, cryptocapsin cucurbitaxanthin A, β -cryptoxanthin, capsanthin epoxide, zeaxanthin, and β -carotene. Especially, capsanthin and capsorubin are characteristic carotenoid in paprika. They show strong anti-oxidative and anti-cancer promoting effects. Furthermore, these carotenoids show preventive effects of obesity related diseases^{2,3)}. Paprika carotenoids promoted adiponectin secretion by promoting differentiation of small size adipocyte cells. Moreover, Paprika carotenoids ameliorated chronic inflammation in obesity condition adipocyte cells.

Keywords: anthocyanin, carotenoid, apple, paprika, anti-obesity, diabetes, adipocyte

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