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Changes in anti hyperglycemic and antioxidant activities of selected 5 onion cultivars by heat treatment process

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Onion (*Allium cepa* L.) is one of the most widely used as food or medicinal plant due to their health benefits. It has been reported that onion and their extracts have antibacterial, antidiabetic and antioxidant activity. Those functionalities were enhanced by heat treatment due to the increase of quercetin content. Therefore, we investigated inhibitory activity of 5 selected onions, such as red, yellow, white, boiling onion (purchased from local market in United States) and jeju onion (purchased from local market in South Korea), against rat intestinal α -glucosidase and porcine pancreatic α -amylase before and after heat treatment (121 oC, 30 min). Among 5 onions red onion had the highest the rate of increase in inhibitory activity (68.15%), followed by yellow onion (36.1%) after heat treatment at a concentration of 2 mg/mL (freeze dried powder of onion liquid in distilled water). These results suggest that onion cultivars enhanced high α -glucosidase inhibitory activity by heat treatment have the potential to contribute as a useful dietary supplement for controlling postprandial hyperglycemia. Furthermore, it is an important finding that heat treatment may improve the functionality of onions, although we need to identify the changes in profile of bioactive compounds before and after heat process.

Biography

Yu-Ri Kang is currently a Doctoral student in Hannam University, South Korea. Her major study field is bioactive polyphenols from natural plant foods inhabited in Jeju and emerging issues in modern food science studies, especially in US.

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