

# Anti-degranulation and bile acid-binding activity of fruits and agro-industrial by-products

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Credit: Anna Langova/Public Domain

The unused parts of fruits and vegetables such as pulp after juicing often contain more phytochemicals with bioregulatory functions than the used parts but are regularly discarded. Since food functionality research is conducted on the parts used, there is insufficient information and evaluation of the functionality of unused parts.

The agriculture and [food industry](#) has a significant problem of having to bear the high cost of disposing of processed waste of fruits and vegetables. Associate Professor Takeshi Kawahara and Professor Yasunori Hamauzu of Shinshu University's Faculty of Agriculture hypothesized that excellent functionality related to prevention of lifestyle disease exists in the unused parts of fruits and vegetables that often contain a lot of phytochemicals with bioregulatory function. They investigated the relationship between active candidate components and functionality in multiple evaluation systems related to antiallergic effects.

Chinese quince hot-water extract was studied for its proanthocyanidin content that demonstrated a [bile acid](#)-binding ability. The ethanol extract of the grape bunch stem showed the highest anti-degranulation activity of by-products studied, and it was determined that proanthocyanidin content, not the total polyphenol or pectin content, was related to both the anti-degranulation effect and the bile acid-binding ability of the extracts. As a result, this study obtained important findings that will ultimately lead to the utilization of previous waste that costs money to dispose of.

This study published in the journal *Food Bioscience* elucidated the possibility of reconsidering agricultural industry waste as a valuable anti-allergic resource. The next step is to evaluate the [functionality](#) shown in this study with an analysis system in an actual living body and verify its effectiveness. By gathering a wide range of information for functional foods of unused resources that are currently being discarded, a concrete method for the utilization of functional materials can be better determined.

**More information:** Yasunori Hamauzu et al, Anti-degranulation and bile acid-binding activity of extracts from fruits and agro-industrial by-products, *Food Bioscience* (2021). [DOI: 10.1016/j.fbio.2021.101244](#)

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