

研究業績 英文表記

和文	
表題	エゴマ3品種のポリフェノールの含量及び種類は異なっており、その抗アレルギー活性も異なる
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英文	
Title	Perilla pomace obtained from four different varieties have different levels and types of polyphenols and anti-allergic activity
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Abstract	<p><i>Perilla frutescens</i> (L.) Britton var. <i>frutescens</i> (egoma in Japan) is a traditional oilseed that has several varieties with different photoperiod responses. Although egoma pomace, industrial waste produced during oil extraction, is a rich source of macro- and micro-nutrients such as protein, fiber, minerals, and polyphenols, it has not yet been used for purposes other than livestock feeding. To find out a better use of perilla pomace and its function, we selected four varieties of egoma originating from different regions with different photoperiod responses: two varieties were from Japan, which are broadly cultivated for oilseed and are highly sensitive to light and temperature. The other two varieties from Nepal, which are tolerant to low light and low temperature. Rosmarinic acid-3-<i>O</i>-glucoside, rosmarinic acid, and apigenin-7-<i>O</i>-glucoside were detected as the main polyphenolic constituents in every variety, while apigenin and luteolin were present only in perilla pomace from Japan. In IgE-sensitized RBL-2H3 cells, polyphenols derived from two varieties of Japan suppressed degranulation of mast cells, but those derived from the two varieties of Nepal did not, indicating that apigenin and luteolin may be in part responsible for the anti-allergic response. In addition, it was found that proteins involved in the degranulation signaling pathway, such as PLCγ2, Syk, and Akt, were less phosphorylated in cells treated with the egoma pomace extracts of Japanese origin. Taken together, pomace from egoma varieties derived from different regions may differently modulate allergic response in part due to the difference in polyphenol composition and may be applied to develop nutraceuticals and functional foods fortified with anti-allergic properties.</p>
keyword	<i>Perilla frutescens</i> , Rosmarinic acid-3- <i>O</i> -glucoside, polyphenol, anti-allergic properties

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