

The water extract of soybean seeds (*Glycine max* (L.) Merr.) is nearly tasteless, but “kokumi” taste sensation was confirmed upon addition of a basic umami solution containing glutamic acid, inosine monophosphate, and sodium chloride. To identify the key contributors to the “kokumi” taste sensation in soybean seeds, sensory-guided fractionation, taste sensory analyses, and LC–MS/MS analyses were utilized.  $\gamma$ -glutamyl-tyrosine and  $\gamma$ -glutamyl-phenylalanine were identified as contributors to “kokumi taste”; specifically, these  $\gamma$ -glutamyl peptides imparted the “kokumi” taste sensation at a low taste threshold in a basic umami solution. Raffinose and stachyose, which are sufficiently present in soybean seeds, exhibited a synergistic effect in regard to the enhanced “kokumi” taste sensation of  $\gamma$ -glutamyl peptides. This is the first report that the combined use of  $\gamma$ -glutamyl peptides and oligosaccharides can increase the “kokumi” intensity, which suggests that soybean extracts or soymilk can be used to enhance the “kokumi” taste sensation in food products.

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