研究業績　英文表記

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Title	Skin-related enzyme inhibitory activity by hydrolyzable polyphenols in water chestnut (*Trapa natans*) husk
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Abstract	Water chestnut is a floating leaf plant native to Asia and Europe. Its fruit has long been used as an edible and herbal medicine. Water chestnut contains many polyphenols and its consumption can prevent lifestyle-related diseases because it has a suppressive effect on postprandial blood glucose elevation; however, its suitability as a cosmetic material is unknown. Therefore, this study aimed at investigating the anti-aging effect of polyphenols contained in the husk of the devil water chestnut (Trapa natans). Six hydrolyzable polyphenols—1,6-di-O-galloyl-β-D-glucopyranose (Di-GG), 1,2,6-tri-O-galloyl-β-D-glucopyranose (Tri-GG), 1,6-di-O-galloyl-2,3-O-(S)-hexahydroxydiphenoyl-β-D-glucopyranose (nobotanin D), eugeniin, 1,2,3,6-tetra-O-galloyl-β-D-glucopyranose (Tetra-GG), and trapain—were collected and isolated from the water chestnut husk. These polyphenols showed high antioxidant and anti-glycation activities. In addition, inhibitory activities against hyaluronidase, elastase, and collagenase were observed. Especially, eugeniin and trapain, which have many gallic acids and a hexahydroxy-biphenyl group, showed high inhibitory activities. Thus, the polyphenols in water chestnut are beneficial for anti-aging effects.
keyword	water chestnut; polyphenols; skin-related enzyme inhibitory activity; antioxidant activity; anti-glycation activity

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