Functional Properties of Dioscorin, a Soluble Viscous Protein from Japanese Yam (Dioscorea opposita Thunb.) Tuber Mucilage Tororo

Takeshi Nagai* and Toshio Nagashima

Department of Food Science and Technology, Tokyo University of Agriculture, Hokkaido 0992493, Japan. Fax: +81-152-48-3850.
E-mail: t1nagai@bioindustry.nodai.ac.jp, nagatakenagatake@yahoo.co.jp

* Author for correspondence and reprint requests

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A soluble viscous protein was purified from yam (Dioscorea opposita Thunb.) tuber mucilage tororo by chromatographic steps, and its functional properties were estimated. The purified dioscorin having the molecular weight of about 200 kDa exhibited high scavenging activities against hydroxyl radicals (IC$_{50} = 195.1$ µg/ml) and superoxide anion radicals (IC$_{50} = 92.7$ µg/ml). Moreover, it showed extremely high angiotensin I-converting enzyme inhibitory activity (IC$_{50} = 41.1$ µg/ml). The results suggested that yam D. opposita tuber has a wide spectrum of strong antioxidative and antihypertensive activities and it could be utilized as a source of natural antioxidant.

Key words: Japanese Yam Tuber Mucilage, Viscous Protein, Functional Property