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Antioxidant, Lipid-Lowering and Antihypertensive Effects of Red Welsh Onion (*Allium fistulosum*) in Spontaneously Hypertensive Rats

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The physiological effects of red Welsh onion were examined and compared with those of white Welsh onion. Male 6-week-old spontaneously hypertensive rat (SHR) was fed a control diet or diets high in fat and sucrose (HFS) with or without 5 % Welsh onion (red or white variety) for 4 weeks. A significant effect to suppress the increase in the blood pressure and the increase in the lipids in plasma and liver was observed in rats fed the red, but not white, Welsh onion compared to the rats fed the HFS diets. Red and white Welsh onion was effective to suppress the increase in the lipid peroxides in plasma, and in liver in case of white Welsh onion. The activity of antioxidant enzymes was downregulated by feeding the red and white Welsh onion. These results suggest that, although the antioxidant activity of red Welsh onion is weaker than the white one, antioxidant activity together with hypolipidemic effect of red Welsh onion might work favorably to suppress the increase in blood pressure. Detection of flavonoids, especially quercetin, and anthocyanins suggests that these compounds might be physiologically active components in red Welsh onion.

Keywords: [red Welsh onion](#), [spontaneously hypertensive rats](#), [antioxidant effect](#), [antihypertensive effect](#), [hypolipidemic effect](#)

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