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Screening of Edible Plants for Reducing Activity by Monitoring Their Effects on the Oxidation of Oxymyoglobin

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The ability to determine the total reductant capacity (*i.e.* the total amount of electron-donating antioxidants) in dietary foodstuffs would be useful, because foods contain a number of different components with reducing activity. We assessed reducing activity in a variety of edible plants, including various fruits, vegetables, roots, and tubers. The reductive effect was assessed by measuring the ability of each sample to inhibit the oxidation of oxymyoglobin (MbO₂) to metmyoglobin (metMb). We found that several types of plant, such as Chinese cabbage, lemon, paprika, and radish, show marked inhibitory effects on MbO₂ oxidation. Using the MbO₂ assay, it was determined that L-ascorbic acid (AsA) was the main reductive substance in these active plants. However, the majority of the plants tested, including herbs that are regarded as being abundant in antioxidants, were found to promote MbO₂ oxidation. The results of the present study may be useful in the identification of beneficial dietary foodstuffs.

Keywords: [reducing activity](#), [reductants](#), [oxymyoglobin](#), [L-ascorbic acid](#)[reducing activity](#), [edible plants](#)

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