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## Roasted peanuts as a potential bone-health improving food

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The advancement of medicine has increased life expectancy, but people are more interested in extending healthy life instead of living unhealthy long life. Ageing increases the incidence of geriatric diseases including cardiovascular diseases, dementia, cataract and osteoarthritis. Among the diseases, bone-related disorders including fracture and osteoporosis affect adversely the quality of life for old people. Therefore, it is necessary to develop natural substances promoting bone-health without side effects which could be used as food itself or functional food. In this study, we selected 13 natural resources, extracted them with 70% ethanol and boiling water (26 extracts), and tested them for the promoting effects on pre-osteoblastic cell (MC3T3-E1) differentiation using Alkaline Phosphatase (ALP) assay. As the results, 4 extracts from grapes, ginseng, cranberry and roasted peanuts significantly increased the differentiation of pre-osteoblastic MC3T3-E1 cells in ALP assay. Particularly, roasted peanuts exhibited the best activity on the differentiation of MC3T3-E1 cells. The roasted peanut extract was partitioned based on solvent polarity to n-hexane, dichloromethane, ethyl acetate and water fractions, and these fractions were also applied to ALP assay. Ethyl acetate fraction most efficiently induced the differentiation of MC3T3-E1 cells. Then, in order to figure out whether the one of the active compounds included in roasted peanuts is resveratrol and the presence of resveratrol in roasted peanuts was determined by TLC and HPLC. The results revealed that the active compounds in roasted peanuts were not resveratrol. Taken together, roasted peanuts might be beneficial for bone-health by promoting osteoblastic differentiation. Thus, the identification of active compounds other than resveratrol is under investigation. Furthermore, beneficial effects of roasted peanuts on osteoporosis are also under investigation with ovariectomized *in vivo* animal model.

### Biography

So-Young Park is involved in the research field of Natural Product Chemistry and Development of Functional Food. She holds several patents regarding natural substances having potentials as anti-Alzheimer's agents. She has worked on to discover natural products which inhibit beta-amyloid production or aggregation, and neuroinflammation. In addition, she expanded her research interest to search natural products beneficial for osteoporosis and osteoarthritis.

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