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Pure daidzein has hypocholesterolemic effect on female SD rats in nutritionally relevant amount: A nutrigenomic study

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It has been hypothesized that the isoflavone, daidzein and genistein from soybean have hypocholesterolemic activity in human and animal. Pure and isolated daidzein (D, 150 mg/kg diet), genistein (G, 150 mg/kg diet), daidzein:genistein (D+G, 1:1, 300 mg/kg diet) or casein based control diet was fed to 4 groups of 6 week old SD female rats for 4 weeks. Although no significant difference is observed on body weight gain and food intake in any groups, serum cholesterol level was significantly decreased in D and D+G groups compared with control groups. However the both isoflavone and daidzein along with genistein lowered the hepatic free cholesterol and cholesteryl esters levels. Daidzein increased the fecal lipid and bile acid extraction. This hypocholesterolemic effect might be regulated by SREBP and SRE-regulated genes but do not appear to have the effect in this rat study. Most likely, there are multiple mechanisms to increase the expression of these genes and daidzein and genistein could act differently. Further investigation is going on by altering the dietary compositions.

Biography

Keshab Bhattarai has done a three year Doctoral course in Food and Nutrition supported by a Japanese government scholarship. Currently, he is a second year Doctoral student at the United Graduate School of Agricultural Sciences, Ehime University, Japan. His major field of study is Food Science and is doing research in Nutritional Biochemistry under the supervision of Professor Dr. Taro Kishida. His research is focused on the dietary isoflavones mainly daidzein and genistein from soybean.

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