Details of Technology

Name of Technology	Suppression of diabetic complications by polyphenol	Life Science
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Key words	aging, diabetes, glycation, polyphenol, antioxidant	

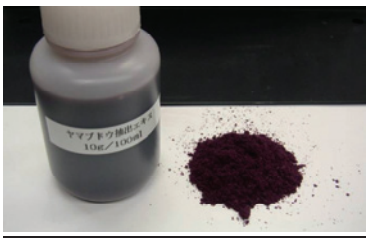
What kind of technology is this?

Outline

Functionality of food derived from Iwate agriculture, forestry and fisheries. The health promoting effects of Iwate's foods.

The lifestyle-related diseases are a serious social problem of this age, comprising almost all the leading causes of death. The lifestyle-related diseases are largely caused by smoking, lack of exercise, and inappropriate daily food intake. Therefore, it is important to suppress such diseases by controlling daily food intake. Much effort has been made to suppress the occurrence of complications such as nephropathy due to high blood glucose in diabetes patients. Diabetic complications are caused by the accumulation of advanced glycation end products (AGEs), which are produced by nonenzymatic glycation of cellular protein. We found that rutin in buckwheat and flavonoids in the extract of the pomace Japanese native grapes inhibited the production of AGEs not only by antioxidation activity but also at several synthesis steps. It has been further suggested that these substances are effective on hyperlipemia. We tried to make tablets and vinegar with the extracted substances. The extraction method was further improved, so that we can now provide the extract with a high concentration of polyphenol. We are now pursuing this research in collaboration with Iwate Industrial Research Institute.

Iwate prefecture is a store-house of foods, and there is great possibility that substances suppressing lifestyle-related diseases may be taken from these foods. We are now planning to examine the effects of many foods.



Extract of Japanese native grapes with high concentration of polyphenol (Yaegaki Bio-industry, Inc.)

What are its applications?

Development of health food (Food for Specified Health Use) for suppressing the progress of diabetes and of high value-added brand products made from Iwate agricultural, forest and fishery materials

Related patents	Japanese Patent Laid-Open No. 2007-131599
Related materials	Mol. Cell. Biochem. 252: 141-147 50: 227-230 (2003). The 51st annual meeting of the Japanese Society for Food Science and Technology. Abstract p51 (2004). The Food Industry June 30 (2008).

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