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Effects of flavanols on the enteroendocrine system: Proanthocyanidins effects on food intake

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Flavanols are plant-derived bioactive compounds for which several beneficial effects have been described. When ingested flavanols reach the gastrointestinal tract, where they can interact with the enteroendocrine cells and model the cell's enterohormone secretion. Since one of the principal functions of the enterohormones is the regulation of food intake, we hypothesize that flavanols might modulate this function. Although there are some papers showing the effects of flavanols on the regulation of enterohormones, very few studies have addressed the specific effects at the food intake level. Working on rats, we defined a treatment with grape-seed derived proanthocyanidins that inhibits a 20% energy intake. We defined the minimal amount of extract required and the effective administration moment. We also showed that other proanthocyanidins reach extract, i.e. cacao derived, are not effective. The inhibition of food intake was found in healthy animals as well as in glucose-intolerant aged animals. Finally, we found that these effects on food intake are concomitant with changes in the food stimulated secretions of the enterohormones (active GLP-1, CCK and total ghrelin); and also with a decreased gastric emptying that could explain part of the inhibitory effects on food intake. In conclusion, proanthocyanidins derived from grape seed at the defined conditions could be used to design satiating agents useful to limit excessive food intake.

Biography

Anna Ardevol is a tenured Lecturer at the Universitat Rovira i Virgili. Her research is lately focused on the interaction of proanthocyanidins (phenolic compounds widely distributed in fruits and vegetables) with the endocrine system, primarily in relation to glucose homeostasis and food intake. She has more than 70 published papers in international journals, indexed in JCR, with an average number of citations per paper of 15.08. Her H factor is 19. She has 2 patents derived from her research. She has developed several management tasks in the University. Now she is the coordinator of the Molecular Bioactivity of Food research group.

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