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Livret des résumés



Institut Jules Guyot



Health & Wine Active Compounds

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EVALUATING THE RELATIVE METABOLIC IMPROVEMENTS OF RED WINE VS. OAK TANNIN INTAKE IN C57BL/6J MICE FED A HIGH-FAT DIET

As ellagic acid has been found to retard the development of chronic disease associated with the consumption of a high-fat (HF) diet by mice [1-4], we hypothesized that ellagic acid and other phytochemicals present in oak (*Quercus robur*) may contribute to the health benefits associated with barrel-aged red wine consumption. This hypothesis was tested using C57BL/6J mice fed the following diets: a 'healthy' low-fat control diet (LF), the HF control diet, and HF diet with the following additions: oak tannin powder (HF+OT); an unoaked red wine grape extract (HF+RWP); and two red wine concentrates made from oaked and unoaked Barbera red wine (HF+OWC; HF+UWC). Powders were added at 0.2% (w/w) of the diet and concentrates were added at 7% (w/w). Experimental diets were provided ad libitum for 10 weeks.

Mice fed high-fat diets containing extracts and purified compounds exhibited some improved metabolic parameters compared to control mice fed the high-fat control diet. Weight gain associated with consumption of the HF diet was significantly reduced ($P < 0.05$) in HF+OT-, HF+OWC-, HF+UWC-, but not HF+RWP-fed mice. The reduced weight gain vs. HF appears to be related to reduced food intake. Similar results were observed for the ratio of liver weight to total body weight, an indicator of relative fat content in the liver. The HF+OT-, HF+OWC-, and HF+UWC-fed groups all had significantly lower ratios ($P < 0.05$) consistent with lower liver fat content; again HF+RWP-fed mice did not show this reduction. Serum glucose levels were not different in all groups as tested at the end of the feeding period, however reductions in serum resistin, a marker for loss of glucose control associated with diabetes was reduced in HF+OT-fed mice as was a marker of chronic inflammation, monocyte chemoattractant protein-1 (MCP-1). Our results are consistent with the hypothesis that intake of phytochemicals contained in oak can lessen the development of MetS symptoms in HF-fed mice.

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