

Grape seed and skin extract—a weapon in the fight against kidney disease caused by high-fat diets

February 28 2013

New insight into grape seed extract as a therapeutic and preventative measure to fight obesity-induced kidney damage is presented in a new study. Grape seed and skin extract (GSSE) is known to contain powerful antioxidants. This study, published in the journal *Applied Physiology, Nutrition, and Metabolism*, is the first to make a link between GSSEs and high-fat-diet-induced renal disease.

The authors examined the effect of GSSE processed from a grape cultivar ('Carignan') of *Vitis vinifera* from northern Tunisia on rats. Rats were fed a high-fat diet that induced a low-grade reno-lipotoxicity, that is, [kidney damage](#) associated with lipids. This was characterized by elevations in plasma urea and protein in the urine. The researchers found increased deposits of triglycerides (TG) (especially [saturated fatty acids](#)), increased signs of oxidative stress and depleted copper levels in the kidneys. There was also histological evidence of disturbance in the kidney structure. When the animals received GSSE at 500 mg/kg bw (which corresponds to 35g/day for a 70 kg human adult) along with the high-fat diet there was a partial reversal of the TG deposition as well as the histological damage. The authors suggest polyphenols including resveratrol are likely the components in GSSE responsible for the positive effects. Furthermore the GSSE prevented the oxidative stress and copper depletion.

"In our research, obesity-induced leaky kidney and proteinuria are

shown to be prevented by GSSE, which suggests the use of GSSE as a preventive nutraceutical for high-[risk patients](#)," said co-author Kamel Charradi, a researcher with the Laboratory of Bioactive Substance at the Center of Biotechnology of Borj-Cedria (CBBC) in Tunisia. This research group has previously published work showing the benefits of GSSE in combating obesity, heart dysfunction, brain lipotoxicity and [kidney cancer](#).

More information: The article "Grape seed and skin extract alleviates high-fat-diet-induced renal lipotoxicity and prevents copper depletion in rats" is available Open Access in the journal Applied Physiology, Nutrition, and Metabolism, [DOI: 10.1139/apnm-2012-0416](https://doi.org/10.1139/apnm-2012-0416)

Provided by Canadian Science Publishing (NRC Research Press)

Citation: Grape seed and skin extract—a weapon in the fight against kidney disease caused by high-fat diets (2013, February 28) retrieved 6 May 2024 from <https://medicalxpress.com/news/2013-02-grape-seed-skin-extracta-weapon.html>

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