

VELVET ANTLER PROTECTS THE LIVER

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A Canadian researcher has found scientific evidence that elk velvet antler (EVA) may protect the liver from disease.

Dr. Susan Hemmings, who has established a research program committed to assessing the impact of nutraceuticals on the liver, is a professor in the Department of Physiology at the College of Medicine, University of Saskatchewan in Saskatoon, Canada. Her interest in and work with elk velvet antler was prompted by a curiosity that extends to all aspects of her life.

"Three years ago, I was at a mini trade show in our community, and stopped at a booth where elk velvet antler was being promoted," she explains. "First, they corrected my misunderstanding of the velvet antler. I thought it was the velvet on the outside of the elk antler, but I learned it is the inner core of the antler harvested during the velvet stage. I was interested 100%."

The composition of the antler core intrigued her. At the velvet stage, it has not ossified into bone, but is a gelatinous material that is highly vascular and full of nutrients, including growth factors. She could visualize it as an effective nutraceutical and wanted to test it on the liver.

The liver is essential to life and performs a myriad of functions. It is involved in the processing of the food we eat and keeping the levels of nutrients constant in the body. It produces proteins essential for clotting of the blood, immunoglobulins needed for immunity. It protects the body by selectively filtering the blood removing harmful viruses, bacteria and foreign materials. It is critically involved in detoxification and removal of harmful chemicals that enter the body. But the liver is sensitive to being damaged and damage is involved in the development of liver disease.

There are over 100 different forms of liver disease. Presently liver disease affects one in 12 Canadians and is the fourth leading cause of death, according to the Canadian Liver Foundation. It is increasing and there are no effective treatments.

"The only real treatment we have is transplantation. While we are learning a great deal about this, and have made many strides, there will never be enough livers to go around," Hemmings said.

Because the liver is so easily damaged, Hemmings' first concern was the toxicity of elk velvet antler. Her research, however, detected no signs of any negative effects on the growth, behavior or health of the animals and no evidence of any toxic effect on the liver. This extends other studies done by such researchers as Dr. Jeong Sim, a scientist at the University of Alberta. Her studies were carried out in adults as well as animals that consumed velvet antler from before birth until adulthood. Further, they addressed the specific question of liver toxicity.

She said lack of toxicity was an important first step before antler would be accepted as a medicine.

When the liver is in good health, one particular enzyme, gamma-glutamyltranspeptidase, or GGT, is found in lower amounts in the liver. But the enzyme's levels are elevated in liver disease.

"We found that the rats that were fed with antler velvet in their rat chow had a decrease in GGT (compared with control group rats). We felt that the antler velvet was providing some protection for the liver," she said.

Next, Hemmings treated rats with the powerful liver damaging chemical carbon tetrachloride to induce a moderate level of liver damage. They were tested for another enzyme, transaminase. This enzyme is present inside the healthy liver cell. It is released from the liver into the blood-stream if serious liver damage has occurred. The animals that had been fed the antler velvet showed a 300% drop in transaminase levels compared to the control group.

"We now know the antler is having a protective effect. We need to know more. I need to study this further," she said. For example, further research is needed to determine whether elk velvet antler will facilitate healing of damaged livers as well as protecting them from disease. There is some other research that suggests EVA promotes tissue healing. Hemmings is particularly interested in assessing the benefits of EVA in various liver diseases such as hepatitis, cirrhosis and liver cancer.

Hemmings' initial research was self-funded. Recently she has received a \$10,000 (USD) grant from the Elk Research Council of the North American Elk Breeders Association.

One of the many benefits that Hemmings sees from being able to complete additional research studies is to legitimize EVA as a nutraceutical and potential medicine. Positive results from her work will attract additional resources and funding for more research into the health benefits of this product.

For more information, or if you or your association wishes to make a financial contribution to support this research, please contact:

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