

## Herbal Remedy Essiac® and Cancer

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### Description

Two new studies examine the purported benefits of Essiac®, an herbal compound often used by those with cancer.

Newswise — Essiac® is an herbal formula that has been used by North American cancer patients. Its recorded history dates back to the 1920s when Canadian nurse Rene Caisse blended a tea of burdock root, sheep sorrel, slippery elm bark, and turkey rhubarb root, and offered it to her cancer patients. It is believed she received the formulation from an Ojibwa Indian woman. The name Essiac is Caisse spelled backwards.

Despite its relatively widespread use, there is little published research about this herbal remedy in the scientific literature. As a result, two teams of Canadian researchers launched research efforts.

The first group of researchers utilized a series of assays to determine the validity of some of Essiac®'s purported activities in vitro; the second group used an animal model to investigate the effects of the mixture on the stomach, liver and immune system. Both studies were funded by an educational grant from the manufacturer of Essiac®. The company had no role in the collection or analysis of the data.

Both research teams are presenting their findings at the 21st Annual Meeting of the American Association of Naturopathic Physicians (<http://www.Naturopathic.org>), being held August 9-12, 2006 at the Oregon Convention Center, Portland, OR.

### Study 1: In Vitro Analysis of Herbal Compound Essiac®

The first study entitled, An In Vitro Analysis of the Herbal Compound Essiac®, was conducted by Deborah A. Kennedy, MBA, ND (Cand.), Division of Clinical Epidemiology, The Canadian College of Naturopathic Medicine, Toronto, CN; Stephen P. Myers, PhD, BMed, ND, Phillip A. Cheras, Ph.D., BAppSc., David Lin, Ph.D., Rachel Li, PhD, Trudi Cattley, BAppSc., and Petta-Anne Paul Brent, BSc., all of the Australian Centre for Complementary Medicine, Southern Cross University, Lismore, NSW, AU; Dugald M.R. Seely, ND, MSc. (Cand.), Division of Clinical Epidemiology, The Canadian College of Naturopathic Medicine, Toronto, CN and the Institute of Medical Science, University of Toronto, CN; and Blair J.N. Leonard, MD, Faculty of Medicine, University of Toronto, Toronto, CN.

### Methodology

The purpose of the study was to utilize a series of assays to determine several of Essiac®'s purported activities in vitro. The activity of Essiac® was measured using established in vitro assays to quantify: (1) antioxidant activity; (2) platelet aggregation inhibition; (3) anti-microbial activity; (4) arachidonic acid pathway inhibition; (5) cell-based immunomodulation; (6) neoplastic cell specific cytotoxicity; (7) fibrinolytic activity; and (8) inhibition of enzymes of the CYP450 pathway.

### Results

Highlights of the findings showed:

- § there was significant antioxidant activity in the ABTS assay, with 1 ml of Essiac® having the anti-oxidant activity of 3mm Trolox, a vitamin E analogue;
- § Essiac® at 20-fold dilution showed significant immunomodulatory effects;
- § Essiac® showed significant cell specific cytotoxicity towards ovarian epithelial carcinoma cells;
- § after hydrolysis with beta glucosidase, Essiac® showed increased cytotoxicity towards prostate adenocarcinoma cells;
- § a 20-fold dilution of Essiac® showed significant inhibition of several cytochrome P450 enzymes;
- § Essiac® demonstrated dose-dependant inhibition of clot fibrinolysis; and
- § Essiac® showed no specific activity in the platelet aggregation or anti-microbial assays.

## Conclusions

This analysis of Essiac® indicates significant antioxidant and immunomodulatory properties, as well as neoplastic cell specific cytotoxicity consistent with the historical properties ascribed to this compound. Importantly, significant cytochrome P450 and fibrinolysis inhibition was also observed. These data represent the first comprehensive investigation of the in vitro effects of Essiac®.

## Study 2: An In Vivo Analysis of the Herbal Compound Essiac®

The second study entitled, An In Vivo Analysis of the Herbal Compound Essiac®, was conducted by Blair J.N. Leonard MD, Faculty of Medicine, University of Toronto, Toronto, ON; Deborah A. Kennedy, MBA, ND (Cand.), Division of Clinical Epidemiology, The Canadian College of Naturopathic Medicine, Toronto, CN; Fong-Chi Cheng, MDS Pharma Services-Taiwan Ltd., Taipei, TW; Keng-Kuang Chang, MDS Pharma Services-Taiwan Ltd., Taipei, TW; and Dugald M.R. Seely, ND, MSc. (Cand.), Division of Clinical Epidemiology, The Canadian College of Naturopathic Medicine, Toronto, CN and the Division of Hematology/Oncology, Hospital for Sick Children, Toronto, CN.

## Methodology

The study aimed to assess some of Essiac®'s purported effects on the liver, stomach and immune system. To do so, the researchers administered Essiac® liquid extract to Wistar rats under established rodent experimental models. The rats received Essiac® 30-minutes prior to a physical challenge to the liver, stomach or immune system. The rats were dosed again with the compound at 4, 8 and 24 hours. Also at 24 hours they were sacrificed and specific levels were measured, including body weight.

## Results and Conclusions

Essiac® showed significant effects in gastric protection and non-significant changes with other properties. Thus, the researchers concluded that Essiac® administered in established in vivo experiments did not significantly demonstrate the purported physiological modifying effects. These results are significant as they represent the first published investigation on the in vivo effects of Essiac® consumption.

The American Association of Naturopathic Physicians (AANP) was founded in 1985 to provide alternative methods for healing human diseases and disorders than have been traditionally offered in the United States. Members of the AANP must have graduated from one of North America's six accredited graduate schools of naturopathic medicine.