

Echinacea induced hsp70 alterations in leukocytes

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- [Congress Abstract](#)

Heat shock proteins (hsp) are expressed constitutively as well as induced in response to mild stress. These stress factors include inflammation, viral and bacterial infection, oxidative stress and cytotoxins. Altered hsp expression has been found in a number of disease states [1]. Echinacea is used as a prophylactic to boost the immune system and has been previously shown to enhance hsp70 expression in leukocytes after mild heat shock [2]. In this study, the effects of echinacea supplementation on hsp70 expression in the different leukocyte subpopulations has been examined. Twenty four healthy volunteers aged between 20 and 66 years with a body mass index ranging from 20.2 to 30.7 participated in the study. They consumed 2 echinacea tablets (4.42mg total alkylamides per tablet) twice a day for 14 days. Blood samples were taken on days 1 and 15 and hsp70 expression was determined by flow cytometry in whole blood with and without in vitro heat shock. Significant differences were observed in the percentage of several white cell subsets that expressed hsp70. CD4 and CD8 lymphocytes expressed significantly more hsp70 in both males and females after supplementation but in natural killer cells and B lymphocytes, expression of hsp70 were only significantly increased in the male participant cohort. These results indicate that Echinacea may play a role in activating the immune system when the body encounters a challenge such as a virus. **References:** 1. Srivastava, PK. (2002) *Ann Rev Immunol* 20: 395-425. 2. Agnew, LL. (2006) *J Clin Pharm Ther* 30: 363-9.