The following are excerpts from various medical journals regarding studies done with the ingredient **CORDYCEPS** which show the potential benefits. (This is only a partial list of the many studies being done with this ingredient,) This is to be used for informational purposes only.

Xu RH Peng XE Chen GZ Chen GL

Effects of Cordyceps sinensis on natural killer activity and colony formation of B16 melanoma.

In: Chin Med J (Engl) (1992 Feb) 105 (2): 97-101

CHINESE MEDICAL JOURNAL

This paper reports the study on the effects of the thanol extract of Cordyceps sinensis (CS-II), a potent herbal tonic, on murine and human in vitro natural killer cell (NK) activities and on murine in vitro NK activity (by 1251 clearance assay), and on colony formation of B16 melanoma in mouse lungs. The results revealed that: 1. The in vivo and in vitro NK activities of mouse were both significantly augmented by intraperitoneal (ip) injection of CS-II. Besides, the inhibition of mouse NK activity by cyclophosphamide (Cy) was prevented following the administration of CS-II; 2. The in vitro NK activity of human peripheral blood mononuclear cells (PBMs) was elevated by preincubation of PBMs with CS-II; and 3. The colony formation of B16 melanoma in mouse lungs was reduced significantly by ip pretreatment of the mice with CS-II. This study indicated that CS-II *may be used as an immunopotentiating agent in treating* cancer *and immunodeficient patients.*

Institutional address: Institute of Combined Traditional Chinese and Western Medicine; Hunan Medical University; Changsha.

Effects of Cordyceps sinensis on murine T-lymphocyte subsets

In: Chin Med J (Engl) (1991 Jan) 104(1):4-8

CHINESE MEDICAL JOURNAL

It was shown by flow cytometry analysis that crystallized preparation of Cordyceps sinensis (Cs-Cr) caused significant elevation of the number of T helper cells and Lyt-1/Lyt-2 (T helper to T suppressor cell) ratio both in peripheral blood and the treated mice spleen. The spleen weight, phagocyte counts and phagocytic activity were also elevated in the treated group. In addition, Cs-Cr could protect T helper cells from the immunosuppressive effects of prednisolone acetate and cyclophosphamide. *These result further substantiate the fact that Cs-Cr is an immunoregulator/biological response modifier of cellular immunity and may be potentially useful in handling immunodeficient or immunosuppressed patients.*

Institutional address: Institute of Combined Traditional Chinese and Western Medicine; Hunan Medical University; Changsha.

Antiumor activity of an extract of Cordyceps sinensis (Berk.) Sacc. against murine tumor cell lines.

In: Jpn J Exp Med (1989 Aug) 59(4):157-61

A warm water-extract (ECS) prepared from dried Cordyceps sinensis (Berk.) Sacc., a Chinese traditional medicine, was tested for antiumor activity in vivo and in vitro. Ehrlich ascites carcinoma cells (EAC), allogenic to ICR mice and Meth A fibrosarcoma (Meth A), syngeneic to BALB/c mice were used as the target tumor cell lines. Mice were inoculated i.p. with 1 x 10 (6) EAC or 1 x 10 (5) Meth A on Day 0, and ECS or saline (control) was injected i.p. to the mice from Day 1 to Day 4. ECS-treatment increased the median survival time of the allogenic mice inoculated with EAC to 316% of the control. Eight of the 10 ECS-treated mice survived on the 60th day (Day 60) after EAC implantation. ECS-treatment also increased the median survival time of the syngeneic mice inoculated with Meth A to 312% of the control. Half of the ECS-treated mice survived on Day 60. On the other hand, no cytotoxic effect of ECS was found or! either EAC or Meth A in vitro. The antiumor effect of ECS seen in the allogeneic mice was significantly reduced when the mice received whole body X-irradiation (5 Cy) before EAC implantation. *These results suggest that the antiumor effect of ECS may be mediated through its jmmunomodulating* action.

Institutional address: Department of Pharmacology; Kanazawa **Medical University; Ishikawa; Japan.**

Augmentation of various immune reactivities of tumor-bearing hosts with an extract of Cordyceps sinensis.

In: Biotherapy (1990) 2(3): 199-205

BIOTHERAPY

In order to enhance general reactivity of immune system in the tumor-bearing host, we employed extract of Cordyceps sinensis (CSE) as a biological response modifier. Cordyceps sinensis is an interesting material produced by a kind of mushroom parasitic to larval moths and was used to hasten recovery from exhaustion in ancient China. In this experiment, C57BL/6 mice implanted subcutaneously with syngeneic EL-4 lymphoma cells were employed as the host. Oral administration of the extract leads to a reduction of tumor size and prolongation of the host survival time. As judged by plaque-forming cells against T-dependent (sheep erythrocytes) and T-independent (bacterial lipopolysaccharide) antigens, CSE showed to augment the antibody responses. As for the activities of peritoneal macrophages, chemotaxis was dramatically depressed within a few days after EL-4 transplantation up to the end of life, but treatment with CSE at *-14, -7,* -4, +4, +7, and +10 days after the tumor transplantation augmented the activity about four times stronger than that of control. Phagocytic activity of macrophages was also decreased in tumor-bearing mice treated with cyclophosphamide (100 mg/kg) 3 and 5 days after tumor transplantation. But administration of CSE restored the activity to more than the normal level. The overall *efficacy of CSE was tested with protective activity against* systemic *infection by Salmonella enteritides. The tumor-bearing mice receiving this medicine lived significantly longer than any other groups without CSE.*

Institutional address: Department of Pharmacology; Kanazawa Medical University; Ishikawa; **Japan.**

Cordyceps

[Amelioration of **aminoglycoside nephrotoxicity by Cordyceps sinensis in old patients]**
In: Chung Kuo Chung Hsi I Chieh Ho Tsa Chih (1994 May) 14(5):271-3,259
CHUNG KUO CHUNG HSI I CHIEH HO TSA CHI (Published in Chinese)
The protective effect on aminoglycoside nephrotoxicity by Cordyceps sinensis in the old patient was observed. 21 old patients were randomly divided into two groups. Each group received amikacin sulfate for 6 days. In addition, group A was administered Cordyceps sinensis for 7 days and group B was given placebo. The results revealed that group A developed less prominent nephrotoxicity compared with group B as evidenced by less urinary nephroaminoglycosidase (NAGase) and beta-microglobulin in group A that those in group B. These results suggested that Cordyceps sinensis exerted a protective effect on aminoglycosides nephrotoxiticity *in the old* patients.
Institutional address: Dept. Of Geriatrics; Jinling Hospital Nanjing.

[Effect of Cordyceps sinensis on T-lymphocyte subsets in chronic renal failure]
In: Chung Kuo Chung Hsi I Chieh Ho Tsa Chih (1992 Jun) 12(6): 338-9, 323
The effect of Cordyceps sinensis (CS) on peripheral NK ceils from healthy persons and leukemia patients were studied. These results showed that CS could augment the NK cell activity, meanwhile, the dose-dependent effect was found within the range of dosage adopted (r= 0.984, P less than 0.01; r= 0.988, P less than 0.01). Furthermore, CS could also improve the CD16 marker expression on lymphocytes and the binding capacity to K562 cells. Cytotoxicity could not present when the PBNCs were co-incubated with CS. These results suggested that CS could be exploited and utilized *as an approach of biological responsive modifier therapy (BRA/T) in the treatment of leukemia.*
Institutional address: Research Unit of Haematology; Huashan Hospital

[Short-term curative effect of cultured Cordyceps sinensis (Berk.) Sacc. Mycelia in chronic hepatitis B]
In: Chung Kuo Chung Yao Tsa Chih (1990 Jan) 15(1):53-5, 65
CHUNG KUO CHUNG YAO TSA CHIH CHINA JOURNAL OF CHINESE MATERiA MEDICA (Published in Chinese) 33 cases of chronic hepatitis B patients treated with cultured Cordyceps sinensis mycelia have shown that the drug improved the liver function, promotes negative transfer HBsAg, and markedly helps to raise plasma albumin, resist high gamma globulin and to adjust body immunocompetence. *It is therefore suggested* that *cultured Cordyceps sinensis mycelia may be used as a medicine for chronic hepatitis B patients in adjusting protein metabolism and correction inversion* of *albumin and globulin.*
Institutional address; Shanxi Liver Diseases Research Co-operation Group.

Zhang Z Xia SS
Cordyceps Sinensis-l as an immunosuppressant in heterotopic heart allograft model in rats.
In: J Tongji Med Univ (1990) 10(2):100-3
JOURNAL OF TONGJI MEDICAL UNIVERSITY to investigate the inhibitory effects of Cordyceps Sinensis-t (CS-1) On the immune response responsible for the organ transplant rejection, we studied its effects of prolonging heterotopic heart allograft survival on rat model with heart graft; the effects of CS-1 were compared with those of cyclosporine A and glucocorticoid, and the possible pathological changes caused by CS-1 were observed. Our results showed that CS-1 can prolong the survival of grafted heart without causing infection, and it did not exert detrimental effect on vital organs. As *a result. it* proves *to be* a *promising immunosuppressant in clinical organ transplantation in the future.*
Institutional address: Institute of Organ Transplantation
Tongji Hospital, Tongji Medical University, Wuhan.

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