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Cordyceps



Common Names

- Vegetable caterpillar
- Chinese caterpillar fungus
- Dong chong xia cao
- Semitake
- Hsia ts'ao tung ch'ung
- Yarsha gumba

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[For Patients & Caregivers](#)

[For Healthcare Professionals](#)

For Patients & Caregivers

How It Works

Cordyceps has not been shown to treat or prevent cancer.

Cordyceps is used in traditional Chinese medicine. It contains a fungus that grows on caterpillar larvae. Both are contained in the product and both are consumed. Lab studies show that cordyceps can stimulate immune cells, but it is not known if this effect occurs in humans. Animal studies suggest that cordyceps can stimulate progesterone production and reduce kidney toxicity from harsh medications, but whether this would occur in humans is also unknown. Studies in kidney transplant patients suggest cordyceps can help improve kidney function, but more study is needed.

Cordyceps has blood-thinning properties. It may also reduce blood sugar levels.

Purported Uses

- **To stimulate the immune system**

Lab studies show that cordyceps stimulates the immune system, but it is not known whether this effect occurs in humans.

- **To treat kidney failure**

A few studies show that cordyceps may help improve renal function, but additional studies are needed.

Do Not Take If

- You are having a **surgical procedure**: A case report of excessive bleeding from a dental extraction was linked to taking cordyceps.
- You have a **myelogenous type cancer such as AML or CML**: Lab studies show cordyceps can increase the number of red blood cell precursor cells. These cells arise from the same cell lines that cause myelogenous cancers.
- You take **insulin or other blood-glucose lowering medications**: Lab studies suggest cordyceps may increase effects of these medications. Although

clinical relevance has yet to be determined, blood glucose should be closely monitored.

- You take a **drug that has blood-thinning activity**: Cordyceps may increase bleeding risk.

For Healthcare Professionals

Scientific Name

Ophiocordyceps sinensis (renamed 2007), Cordyceps sinensis, Sphaeria sinensis

Clinical Summary

Cordyceps includes the fungus that grows on the larvae of the caterpillar *Hepialus armoricanus* Oberthuer. Both are contained in the product and both are consumed. Cordyceps is used for a wide range of conditions including fatigue, sexual dysfunction, coughs, and as an adaptogen or immune stimulant. In vitro and animal studies show antitumor ^{(10) (11) (14)}, radioprotective ⁽¹²⁾, antiplatelet ⁽¹⁹⁾ and antidiabetic effects ^{(15) (16)}. In addition, cordyceps enhances recovery of mice with taxol-induced leukopenia ⁽¹³⁾ and increases the cytotoxicity of cisplatin in non-small cell lung cancer cells ⁽¹⁷⁾.

A few studies have also been conducted in humans. Cordyceps products improved renal function and reduced nephropathy in renal transplant patients ^{(18) (21) (23)} and diabetes patients with renal insufficiency undergoing coronary angiography ⁽²⁵⁾. However, several analyses found that evidence for its utility as adjuvant treatment in renal transplant recipients and hemodialysis patients is insufficient ^{(26) (27)}. Studies on exercise performance in healthy subjects yielded mixed results ^{(22) (24)}.

Cordyceps may increase the adverse effects of antidiabetic or anticoagulant/antiplatelet drugs. Animal studies showed proliferation of progenitor red blood cells with cordyceps ⁽⁸⁾. Therefore, it should not be used by those with myelogenous type cancers. Cordyceps also stimulated testosterone production in mice ⁽⁹⁾. Whether it exerts similar effects in humans is not known.

Purported Uses

- Kidney disease
- Diabetes
- Immunostimulation
- Strength, stamina

Mechanism of Action

Laboratory studies demonstrate that cordyceps stimulates T helper cells, prolongs lymphocyte survival, enhances TNF-alpha and interleukin 1 production, and increases activity of natural killer cells ⁽³⁾. Enhanced proliferation of erythroid progenitor cells in murine bone marrow ⁽⁸⁾ and increased progesterone production in animal cells ⁽⁵⁾ have also been shown. Other experiments suggest cordyceps may inhibit tumor cells by downregulating MHC class II antigen expression ⁽⁷⁾. Anecdotal data suggest reduction of cyclosporin and aminoglycoside-induced renal toxicity, although the mechanism of action is not known ⁽⁴⁾. Cordycepin, an active constituent in cordyceps, inhibits collagen-induced platelet aggregation by lowering calcium ion and thromboxane A2 activities ⁽¹⁹⁾.

Adverse Reactions

Case Report

Excessive bleeding: Post tooth extraction and associated with cordyceps being used daily as a tonic ⁽²⁸⁾.

Herb-Drug Interactions

Hypoglycemics / Insulin: Laboratory studies suggest cordyceps may have additive hypoglycemic effects [\(16\)](#) [\(17\)](#). Clinical relevance has yet to be determined.

Anticoagulants / Antiplatelets: Laboratory studies suggest cordyceps inhibits platelet aggregation and may increase the effects of these drugs [\(19\)](#). There is also a case report of excessive bleeding from a dental procedure linked to cordyceps [\(28\)](#).

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