



Bitter melon (*Momordica charantia*)

Common Indications:

- Type 2 diabetes
- May help lower HgA1c and fasting glucose levels.
- May help in weight loss protocols.
- May help lower cholesterol levels.
- Analgesic
- Antiviral
- HIV
- Anticancer

General Comments:

Bitter Melon (*Momordica Charantia*) is actually a bitter vegetable grown in many areas of the world and is also referred to as Wild Cucumber, Bitter Gourd, Balsam Apple, Balsam Pear, Ampalaya (Phillipines), and Karela (India). It has been employed as a remedy for bolstering immune system function and lowering blood sugar. It has also been reported to stimulate conversion of white fat to brown fat thus a role in weight loss and general health. There is evidence that it may play a role as a cytotoxic agent in the management of cancer.¹

Benefits & Mechanism of Action:

Diabetes

In the review by Basch ¹ melon fruit extracts enhance insulin secretion thus promoting better glucose control and cellular energy. A 2012 Cochrane Database System Review reported that there was insufficient evidence to promote bitter melon in the management of type 2 diabetes.²⁻¹³

Mixed findings in several animal studies leave questions to bitter melons true physiological impact and benefit in the treatment of insulin resistance or type 2 diabetes. Animal studies lead is to believe that bitter melon might be an adjunct in lowering triglycerides and cholesterol and thus fosters greater confidence in it as a glucose management tool.

HIV

Nine case reports of people with HIV taking bitter melon suggest that it may normalize the CD4:CD8 ratio. The juice of bitter melon had a significant lipid-lowering effect on HIV-1 protease

inhibitor-treated HepG2 cells, suggesting bitter melon's potential for decreasing hyperlipidemia in HIV-infected patients with protease inhibitor-associated hyperlipidemia.

Components of bitter melon have been reported in animal and *In Vitro* studies to have anti-cancer activity. Also, an anti-HIV plant protein has been identified and purified from bitter melon that is capable of acting against multiple stages of the viral life cycle, on acute infection as well as replication in chronically infected cells. In addition to anti-viral action, the protein, termed MAP30, also possesses anti-tumor activity, topological inactivation of viral DNA, inhibition of viral integrase and cell-free ribosome- inactivation activities. The anti-viral agent from bitter melon is capable of inhibiting infection of HIV type 1 (HIV-1) in T lymphocytes and monocytes as well as replication of the virus in already-infected cells. MAP30 seems to be non-toxic to normal uninfected cells because it is unable to enter healthy cells.¹⁴⁻¹⁷

Antiviral

Several constituents found in bitter melon have demonstrated antiviral activity against Epstein-Barr, herpes simplex virus type 1, HIV, coxsackievirus B3 and polioviruses. A study using a lyophilized extract of *Momordica charantia* against HSV-1 suggests that the presence of light may be important for antiviral activity. The active antiviral constituents are not the main bitter principles momordicins I and II, as these have not shown activity against HSV-1. One constituent, referred to as MAP30, has received special attention, as it exhibits potent inhibition of HIV-1 and HSV.¹⁹⁻²⁰

Anticancer

Studies show that a substance in bitter melon extract kills breast cancer tumors. A significant development in regard to bitter melon and breast cancer came in 2010 through a joint study published in the journal *Cancer Research*. Using human mammary cells, the study found that bitter melon extract "significantly decreased proliferation" of cancer cells, inhibited cell growth and even induced apoptosis (programmed cell death) in breast cancer cells.²¹⁻²²

Dose: 200-500mg, 2-3 times daily of a standardized extract, 1 hour before meals.

Glucokine™ has 10% charantins: dosage is 1 tablet 2 times a day.

*Note: There are various products with different dosages and standardizations to choose from. When choosing a dietary supplement, select those from reputable manufacturers.

Standardization: Bitter melon products should be standardized to contain 5.1% terpenes or 10% charantin (Glucokine™).

Cautions & Side Effects:

- Bitter melon has been reported to be safe in recommended doses.
- Use with caution in individuals predisposed to cardiac arrhythmias, as bitter melon was reported in a case report to be a contributing factor in atrial fibrillation (Erden et al, 2010).

- If you are taking prescription or non-prescription medications, have a pre-existing medical condition, or are pregnant and/or breastfeeding, talk with your healthcare provider before taking any dietary supplement.
- Do not take if there is an allergy to any component of this dietary supplement. If you have a pre-existing heart condition, do not use bitter melon supplements without your doctor's approval.

References:

Antidiabetic

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HIV

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Analgesic

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Antiviral

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