PRAKRUTI PRODUCTS PVT LTD

Bitter Melon (*Momordica charantia*)

Momordica charantia L. (Bitter gourd) is a flowering vine in the family of Cucurbitaceae. Bitter melon is a member of the Cucurbitaceae family, and is a perennial climbing elongated fruit that resembles a gourd or cucumber. Some have called it bitter gourd or bitter cucumber [1].

The role of bitter melon traditionally, has been as a food and medicine. It appears that it is not a food staple, but maybe eaten several times a week when in season. Bitter melon has historically been used to address high blood pressure, diabetes, diarrhea, fevers, skin fungal infections, gastrointestinal cramps, psoriasis, hyperlipidemia, hemorrhoids, glaucoma and infertility. It has also been used as a traditional abortifacient [2].

ACTIVE CONSTITUENTS

The active constituents of bitter melon are not definitively determined, but we know the plant contains alkaloids, glycoside, peptides, acids, cucurbitins, charantin, cucurbitacins, momordine, momorcharins and proteins. It is thought that the primary constituents responsible for the hypoglycemic properties are charantin, insulin-like peptide, cucurbutanoids, momordicin and oleanolic acids [3].

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Documented Properties and Actions:

Anthelmintic, antibacterial, antibiotic, antidiabetic, anti-inflammatory, antileukemic, antimicrobial, antimutagenic, antimycobacterial, antioxidant, antitumor, antiulcer, antiviral, aperitive, aphrodisiac, astringent, carminative, cytostatic, cytotoxic, depurative, hormonal, hypocholesterolemic, hypotensive, hypotriglyceridemic, hypoglycemic, immunostimulant, insecticidal, lactagogue, laxative, purgative, refrigerant, stomachic, styptic, tonic and vermifuge.

Clinical trial

A clinical trial that included 9 type 1 diabetics in the treatment group and 10 type 1 and 2 diabetics in the placebo group, found that injections of bitter melon extract, isolated for its crystallized p-insulin, resulted in a statistically significant decrease in blood sugar level. The effect was noted 30-60 minutes after subcutaneous injection, a 21.5% drop from baseline glucose, with a peak effect ranging from 4-12 hours, and a 28% drop after 12 hours. This study was non-randomization and the placebo group had lower average fasting blood glucose at baseline than the treatment group, all of which weakens the validity of the results [4].

Available grades:

5% Total bitters

Specification:

Botanical/ Scientific name	***Momordica charantia***
Identification	TLC
Heavy metal	Not more than 20 ppm
Arsenic	Not more than 1 ppm
Lead	Not more than 3 ppm
Microbiological profile	As per JPN Food Regulation

Reference:

1. Prarthna Daniel, Ujjwala Supe et al., “A review on Phytochemical analysis of Momordica charantia
2. Kandangath Raghavan Anilakumar et al., “Nutritional, pharmacological and medicinal properties of Momordica charantia” International Journal of Nutrition and Food Sciences 2015; 4(1): 75-83
3. Harinantenaina L, Tanaka M, Takaoka S, et al. Momordica charantia constituents and antidiabetic screening of the isolated major compounds. Chem Pharm Bull (Tokyo) 2006;54:1017-1021
4. Baldwa V, Bhandari C, Pangaria A, Goyal R. Clinical trial in patients with diabetes mellitus of an insulin-like compound obtained from plant sources. Upsala J Med 1977;82:39-41