

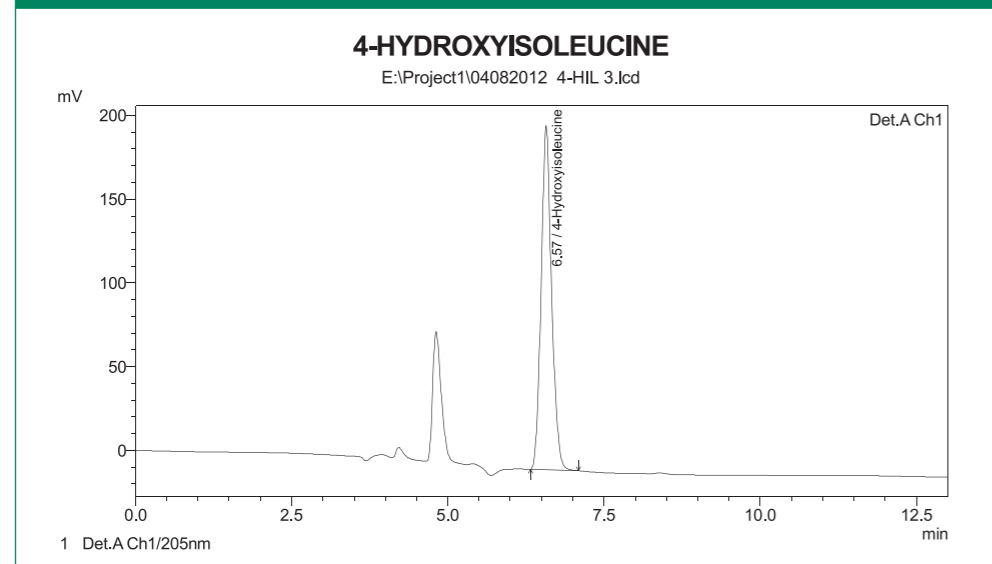
Fenusulin® Quality Assurance

Our strict QC regime ensures all the Fenusulin® batches strictly adhere to our self-quality control rigor. Each lot is tested for the presence of active principle, 4-hydroxyisoleucine, by HPLC.

Specification (4-hydroxyisoleucine 40%)	
Description	: Pale greenish brown to brown color with characteristic odor
Identification	: HPLC
Ash content	: Not more than 0.5%
Loss on drying	: Not less than 5.0%
Solubility	: Water soluble
Heavy Metal	: Not more than 20ppm
Arsenic	: Not more than 1ppm
Lead	: Not more than 10ppm
Bulk Density	: Not less than 0.30g/ml
Sieve Test (40mesh)	: Not less than 100%
Content of 4-HIL	: Not less than 40.0%(by HPLC)
Microbiological Profile	: As per JPN food regulation



HPLC test confirmation for content of 4-hydroxyisoleucine



FENUSULIN®



What's Fenugreek:

Fenugreek, is a spice used in curries, dyes, and medicines. It has been grown wildly in India, the Mediterranean and also in North Africa. The average cultivation of Fenugreek in India averages about 250,000 metric tonne annually.



BIO ACTIVES JAPAN CORPORATION

2-15-9-9F, Kita-otsuka Toshima-ku, Tokyo 170-0004 Japan
TEL: +81-3-5981-0601 / FAX: +81-3-5981-0602
E-mail: info@bioactivesjapan.com <http://www.bioactives.co.jp/>

The statements and product shown here have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

FENUSULIN® is a registered trademark of BIO ACTIVES JAPAN CORPORATION.

BIO ACTIVES JAPAN CORPORATION

FENUSULIN® PRODUCTION PROCESS (seed to shelf traceability system)

FENUSULIN® cultivation

- Selection of cultivar seeds for cultivation.
- 100% monitored-cultivation & harvesting process by expert agronomists.
- Application of Neem-based natural pesticides and fertilizers; free from harmful pesticides.
- Traceability of cultivation region, cultivation process, harvesting details using cropex technology - unique cultivation traceability technology.
- USDA and India organic certified raw materials.



FENUSULIN® extraction & processing

- Dedicated botanical extraction facility – ISO certified.
- Proprietary manufacturing process, free from harmful organic solvents.
- Custom blends and granulation available upon request.



FENUSULIN® Quality Check & Assurance

- Every lot tested for active principles – 4 hydroxy-isoleucine (20, 40 & 70% by HPLC)
- HPLC & other analytical reports available for customers upon request.



FENUSULIN® Safety Profiling and Confirmation

- Analysed for- Heavy metals, Aflatoxins, Pesticides analysis, Microbiological analysis and shelf life stability test.
- Safety profiling and toxicity data (LD50) following OECD guidelines.
- In-vivo efficacy test results available upon request.
- Clinically tested for diabetes management.



Indian Fenugreek

Fenugreek (*Trigonella foenum-graecum*) is a native to India and southern Europe. In Indian traditional medicine, Ayurveda; fenugreek is reckoned in increasing the milk in mother's breast. It is also believed that fenugreek seeds help to reduce blood sugar and reduce the need for insulin.



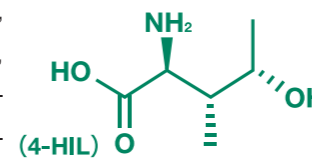
Clinical Indications of Fenusulin®

Unique: 4-Hydroxyisoleucine

Fenugreek seeds contain a unique amino acid, 4-hydroxyisoleucine, which has been reported only in fenugreek.

4-hydroxyisoleucine in several scientific studies has been shown to enhance insulin secretion under hyperglycaemic conditions, and increase insulin sensitivity as well.

Fenugreek also contains fatty acids, flavonoids and minerals like folate, calcium, iron, magnesium, manganese, phosphorus, potassium, selenium, zinc, B-vitamins and vitamin C.

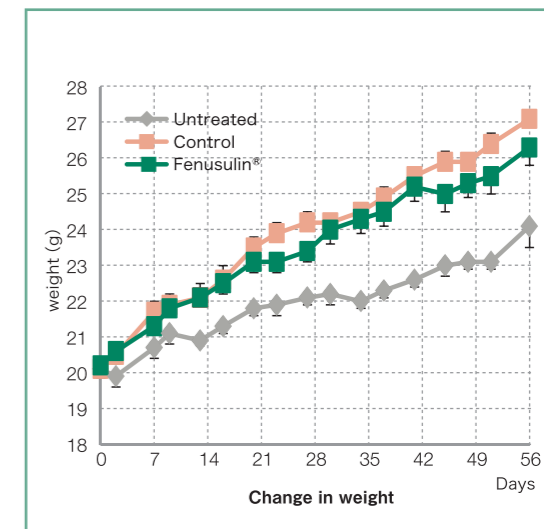


Body Weight Management

In vivo studies were conducted in Japan to investigate the effect of using Fenusulin® (4-hydroxyisoleucine 20%) for 56 days on a high fat diet fed mice. At the end of the study, the body weight increase of the group fed with – Fenusulin® + High Fat Diet were found to be inhibited compared with that of the group fed with only high fat diet. No substantial changes in food intake were found between any groups.

The total triglyceride levels of the Fenusulin group also reduced significantly when compared to the high fat diet intake group.

(Investigation of Anti-obesity Effect in High Fat Diet Loaded Obese Mice, Report No: 08108, Bio Actives Japan, 2009)



Diabetes Management

A double blind placebo controlled study evaluated the effects of hydroalcoholic extracts of Fenugreek seeds on glycemic control and insulin resistance in type-2 diabetes patients. Patients were randomly selected and were advised to take two capsules twice a day and were reviewed for glucose tolerance test. The results showed a significant decline in fasting blood glucose levels as well as in post-prandial blood glucose levels. At the end of the two months study, the blood glucose responses were significantly lower.

Effect of Trigonella foenum-graecum (fenugreek) seeds on Glycemic Control and Insulin Resistance in Type 2 diabetes mellitus: A Double Blind Placebo Controlled Study; JAPI, Vol 49; November 2001.

