



**Clinic**  
Optimizers



## **Ibutamoren (MK-677)**

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### Fact Sheet

# Ibutamoren (MK-677)

**Pharmacologic Category:** Supplement

**General Information:** Ibutamoren, also called MK-677, is an orally-active, non-peptidic, long-acting, and selective agonist of the body's ghrelin receptor. It is also a potent growth hormone secretagogue (1). A secretagogue is a substance that promotes secretion; in this case, Ibutamoren may be a way to stimulate the pituitary gland to secrete growth hormone (1).

Ibutamoren was discovered to significantly elevate growth hormone (GH) levels in canine test-subjects even with oral doses as small as 0.125 mg per kilogram of body weight. It was also shown to specifically increase the release of GH without having a significant effect on circulating levels of:

- Aldosterone
- Luteinizing hormone
- Thyroxine
- Prolactin

This was true even after an oral dose of 1 mg per kilogram of body weight (1).

**Ibutamoren and growth hormone pulse intensity:** the secretion of GH into the body follows a pulsed pattern, with peaks in GH production occurring at specific times in a 24-hour period. GH pulse intensity can be augmented by 4 possible mechanisms (2):

1. By increasing growth hormone releasing hormone (GHRH)
2. Through amplification of GHRH signaling in the somatotrophs of the pituitary gland
3. The reduction of somatostatin (somatostatin stops GH release).
4. Inhibition of somatostatin receptor signaling.

Ibutamoren (MK-677) was shown to positively affect all four mechanisms to stimulate greater GH release by the pituitary gland (2).

**Ibutamoren and increased lean body mass:** In a double-blind, randomized, placebo-controlled, clinical trial of 65 healthy individuals – researchers discovered that test-subjects receiving Ibutamoren experienced a significant increase in lean body mass compared to those given a placebo (3). The subjects in the study were given twenty-five milligrams of Ibutamoren per day for a period of 8 weeks. After 14 days, the subjects showed an observable increase in their basal metabolic rate and an increase in levels of IGF-1, GH, and IGF-1 binding protein-3 (3).

**Ibutamoren and growth hormone stimulation in the elderly:** The stimulatory effect of oral Ibutamoren on the GH and insulin-like growth factor axis was studied using 32 healthy subjects of both sexes and between the ages of 64 to 81 years in a randomized, double-blind, and placebo-controlled trial (4). All subjects either received a placebo or doses of 2, 10, or 25 mg of Ibutamoren once a day for 2 distinct study periods of 2 and 4 weeks.

The once-daily treatment with oral ibutamoren for up to 4 weeks significantly enhanced pulsatile GH release, serum GH, and IGF-I concentrations. Furthermore, at a dose of 25 mg per day, effectively restored serum IGF-I concentrations to the levels of young adults [\(4\)](#).

**Ibutamoren and catabolic states:** In a study on the effect of MK-677 on catabolic states; a once daily, orally-consumed, dose of 25mgs was given to healthy young men (aged 24 to 39) who were subjected to diet-induced nitrogen wasting [\(5\)](#). After seven days at this dose, the test-subjects demonstrated a sustained increase in serum concentrations of both IGF-1 and Growth Hormone; additionally, nitrogen wasting was reversed. The researchers concluded that ibutamoren has potential as a treatment for conditions that involve muscle wasting [\(5\)](#).

**Ibutamoren and fat-loss:** In one study 24 overweight men, between the ages of 18 to 50 years, with waist/hip ratios more than 0.95 were treated with ibutamoren doses of 25 mg or a placebo once per day for 2 months [\(6\)](#). IGF-I was subsequently increased by almost 40% in men being given oral ibutamoren. This study concluded that ibutamoren was effective at producing a significant reduction of fat-free mass [\(6\)](#)

**For children deficient in growth hormone:** In a study conducted on GH deficient children with an average age of approximately 10 years; ibutamoren was found to be a safe and effective treatment to significantly increase GH and IGF-I levels and researchers concluded that short-term administration of ibutamoren will increase GH, IGF-I, and IGFBP-3 levels in some children suffering a GH deficiency [\(7\)](#).

**What is this medicine used for?** Ibutamoren has been found effective in various studies for the treatment of:

- Stimulating the secretion of GH [\(4\)](#)
- Increasing serum levels of IGF-1 [\(4\)](#)
- Diet-induced catabolism (wasting) [\(5\)](#)
- Increasing lean body mass [\(6\)](#)
- Reducing body fat levels [\(6\)](#)

**Who shouldn't take this supplement?** Due to a lack of studies on the safety of ibutamoren during pregnancy and breastfeeding it would be best for women who are pregnant or nursing to avoid using it.

**What are some possible side effects of this medicine?** The only side effects observed so far in subjects taking ibutamoren has been a transient increase in appetite, slight lower extremity edema, and muscle pain; symptoms typically resolved within a period of days to weeks [\(8\)](#).

**How is it best taken?** Ibutamoren is taken orally.

**What do I do if I miss a dose?** If you do miss a dose; it's best to take it as soon as you remember. Although, if it's almost time for the next dose, just skip the missed one and take your next scheduled dose. Don't take two doses at the same time.

**How should I store this medicine?** Store ibutamoren at between 68°F to 77°F (20°C to 25°C) and keep it away from heat, moisture, and light. Keep all medicines out of the reach of children. Throw away any unused medicine after the expiration date. Do not flush unused medications or pour down a sink or drain.

**General statements:** Do not share or take anyone else's medicine. Talk with your healthcare provider before starting any new medicine, including over-the-counter, natural products, or vitamins. This patient information summarizes the most important information about your medication; if you would like more information, talk with your doctor.

- 1) Patchett, AA; Nargund, RP; Tata, JR; Chen, MH; Barakat, KJ; Johnston, DB; Cheng, K; Chan, WW; Butler, B; Hickey, G; et al. (Jul 1995). "Design and biological activities of L-163,191 (MK-0677) a potent, orally active growth hormone secretagogue". *Proceedings of the National Academy of Sciences USA*. 92 (15): 7001–5. PMC 41459 Freely accessible. PMID 7624358. doi:10.1073/pnas.92.15.7001
- 2) Elizabeth C Hersch and George R Merriam. Growth hormone (GH)–releasing hormone and GH secretagogues in normal aging: Fountain of Youth or Pool of Tantalus? *Clin Interv Aging*. 2008 Mar; 3(1): 121–129.
- 3) Nass R, Pezzoli SS, Oliveri MC, Patrie JT, Harrell FE Jr, Clasey JL, Heymsfield SB, Bach MA, Vance ML, Thorner MO. Effects of an oral ghrelin mimetic on body composition and clinical outcomes in healthy older adults: a randomized trial *Ann Intern Med*. 2008 Nov 4;149(9):601-11.
- 4) Chapman IM, Bach MA, Van Cauter E, Farmer M, Krupa D, Taylor AM, Schilling LM, Cole KY, Skiles EH, Pezzoli SS, Hartman ML, Veldhuis JD, Gormley GJ, Thorner MO. Stimulation of the growth hormone (GH)-insulin-like growth factor I axis by daily oral administration of a GH secretagogue (MK-677) in healthy elderly subjects. *J Clin Endocrinol Metab*. 1996 Dec;81(12):4249-57.
- 5) Murphy MG, Plunkett LM, Gertz BJ, He W, Wittreich J, Polvino WM, Clemmons DR. MK-677, an orally active growth hormone secretagogue, reverses diet-induced catabolism. *J Clin Endocrinol Metab*. 1998 Feb;83(2):320-5.
- 6) J. Svensson, L. Lönn, J.-O. Jansson, G. Murphy, D. Wyss, D. Krupa, K. Cerchio, W. Polvino, B. Gertz, I. Boseaus, L. Sjöström, B.-Å Bengtsson; Two-Month Treatment of Obese Subjects with the Oral Growth Hormone (GH) Secretagogue MK-677 Increases GH Secretion, Fat-Free Mass, and Energy Expenditure, *The Journal of Clinical Endocrinology & Metabolism*, Volume 83, Issue 2, 1 February 1998, Pages 362–369.
- 7) Codner E, Cassorla F, Tiulpakov AN, Mericq MV, Avila A, Pescovitz OH, Svensson J, Cerchio K, Krupa D, Gertz BJ, Murphy G. Effects of oral administration of ibutamoren mesylate, a nonpeptide growth hormone secretagogue, on the growth hormone-insulin-like growth factor I axis in growth hormone-deficient children. *Clin Pharmacol Ther*. 2001 Jul;70(1):91-8.
- 8) Nass R, Pezzoli SS, Oliveri MC, Patrie JT, Harrell FE Jr, Clasey JL, Heymsfield SB, Bach MA, Vance ML, Thorner MO. Effects of an oral ghrelin mimetic on body composition and clinical outcomes in healthy older adults: a randomized trial. *Ann Intern Med*. 2008 Nov 4;149(9):601-11.

## Clinic Optimizers Services

### INTEGRATIVE CLINICAL SUPPORT

CO offers product information, clinician education, and treatment application protocols for commonly compounded prescribed medications. CO is trusted by FDA registered 503b and by PCAB certified 503a compounding pharmacies to provide physicians with an educational resource and personalized support to help supplement their practices and to customize their patients' treatment options. Educational topics include:

- Testosterone Replacement Therapy (TRT) in men and women
- HPTA management in men
- Hormone Replacement therapy using compounded products
- Estrogen management using aromatase inhibitors and SERMS
- Compounded adrenal and thyroid products
- Growth Hormone secretagogue use and dosing
- Weight-Management programs
- IV and Injectable nutrition implementation and practice
- Hormone and wellness blood testing and monitoring schedules
- Platelet Rich Plasma Injections and marketing
- Stem Cell treatments
- Hair Restoration

### LABORATORY ACCESS & SUPPORT

Clinic Optimizers can assist with hormone testing including what methodology to use, what tests to order, and how to sue them to administer, titrate, and monitor hormone related therapies. In addition, CO provides clinics with access to low cost lab testing through a nationally recognized laboratory.

### VENDOR REFERRAL & MANGEMENT

Clinic Optimizers has established relationships with key vendors that are vital to practices that focus on HRT and wellness therapies. Contact us if you would like to be referred to one or more of the following resources:

- FDA registered 503b outsourcing facility for office use medications
- PCAB accredited 503a compounding pharmacy for patient-specific medications
- Wholesale lab tests through nationally located laboratories
- Access to medical supply wholesalers

## BRANDING AND MARKETING SERVICES

Clinic Optimizers employs an experienced team who will create, launch, and/or evaluate pages/profiles for clinics to ensure proper branding and traffic. CO will also train clinic staff on how to manage these brand pages and placements.

- Website
- Landing pages
- Social Media Pages and Profiles (Youtube, Facebook, Google+, LinkedIn, Twitter)
- Communications
- Banner space
- Increase Google search traffic to the clinic's website by publishing respected search-engine optimized (SEO) content, interviews, clinician videos, and backlinks.
- Youtube channel uploads
- Facebook post scheduling
- Clinician online presence in forums.

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