

Lumbrokinase

(*Hypoallergenic*)



Item #74870 - 30 capsules
Item #76140 - 60 capsules

The Possible Benefits of Lumbrokinase, a Dietary Supplement

- Supports healthy coagulation of blood within normal levels
 - May enhance fibrinolytic activity, similar to nattokinase
 - Supports healthy blood viscosity within normal levels
-

Description

Evidence of the human use of earthworms goes back many centuries. According to the ancient Chinese medical publication Ben Cao Gang Ma (Compendium of Materia Medica), earthworm (*Lumbricus rubellus*) was said to unblock the body's meridians and channels, and was used to support blood circulation.

In 1883, in a book discussing the action of worms, Charles Darwin observed that earthworm digestive fluids can dissolve fibrin. In the 1980s, Japanese researchers extracted a fibrin dissolving enzyme from *Lumbricus rubellus*, and found that it consisted of six proteolytic enzymes, collectively named lumbrokinase. Since 1992, lumbrokinase derived from earthworms has been extensively studied and used in China. Research has shown lumbrokinase to support healthy coagulation of blood within normal levels and enhance fibrinolytic activity, i.e. similar to nattokinase.

The lumbrokinase (LK) group of proteolytic enzymes, extracted from the researched species of earthworm, includes plasminogen activator and plasmin. The plasminogen activator (e-PA) in LK is similar to tissue plasminogen activator (t-PA) from other sources, which makes it possible to show the thrombolytic activity only in the presence of fibrin. Therefore, LK has the advantage of not causing excessive bleeding.

Lumbrokinase's mechanisms of action include participation in the activation of plasminogen, and direct activity on fibrin itself. LK primarily proteolyzes fibrinogen and fibrin, hardly

hydrolysing other plasma proteins including plasminogen and albumin.

The enzymes in LK have very strong fibrinolytic activity, are stable in a wide pH range, and show great stability against thermal inactivation and degradation. They are alkaline trypsin-like proteases that are greater than trypsin in their stability and tolerance to organic solvents. The activity of LK is much higher than most traditional Chinese products that are available in the United States. Significant amounts of LK have been shown to be transported through the intestinal epithelium, even in healthy subjects.

Four phases of clinical studies have been done on LK at the Beijing Xuanwu Hospital (the top hospital in nerve & internal medicine in China). LK has been widely used in over 100 hospitals in Beijing since 1995. In Jakarta, LK has been used in thousands of hospitals and stores, in more than 20 provinces and cities, as well as in Hong Kong, Taiwan, Southeast Asia, and Europe.

LK is recognised by the Ministry of Public Health in China. LK capsule technology was awarded a certificate of National Significance Achievement in Science and Technology, listed as the Promotional project of National Key Technology Achievement and the National Torch Plan Program, and selected as National Key New product by six major ministries. Long term animal tests have shown that LK is non-toxic and free of side effects. Over 60,000 people have received LK without any major side effects. Product of China.

Serving Size: 2 enteric-coated capsules

Servings Per Container: 15 or 30

Amount Per Serving:

Lumbrokinase

600,000 IU (40 mg)

Other ingredients: Gelatin, starch

Suggested Use: As a dietary supplement, 1 capsule in the morning, 1 capsule in the afternoon and 2 capsules at bedtime, or as directed by a healthcare practitioner. May be taken with or without food. Take with 8-10 oz of water

Contraindications: If taken with anticoagulant drugs use under medical supervision. Contraindicated in any conditions associated with bleeding.

References

- Darwin, C. The formation of vegetable mould, through the action of worms. London, John Murray, 1883.
- Michael Foster. A Text-Book of Physiology. Macmillan, London, 1878.
- Mihara H, Sumi H, Yoneta T, Mizumoto H, Ikeda R, Seiki M, Maruyama M. Jpn J Physiol 1991;41(3):461-72.
- Kim JS, Kang JK, Chang HC, Lee M, Kim GS, Lee DK, Kim ST, Kim M, Park S. J Korean Med Sci 1993 Apr;8(2):117-20.
- Ryu GH, Park S, Han DK, Kim YH, Min B. ASAIO J 1993 Jul-Sep;39(3):M314-8.
- Ryu GH, Park S, Kim M, Han DK, Kim YH, Min B. J Biomed Mater Res 1994 Sep;28(9):1069-77.
- Ryu GH, Han DK, Park S, Kim M, Kim YH, Min B. J Biomed Mater Res 1995 Mar;29(3):403-9.
- Park Y, Ryu E, Kim H, Jeong J, Kim J, Shim J, Jeon S, Jo Y, Kim W, Min B. Artif Organs 1999 Feb;23(2):210-4.
- Sugimoto M, Nakajima N. Biosci Biotechnol Biochem 2000 Jul;65(7):1575-80.
- Jin L, Jin H, Zhang G, Xu G. Clin Hemorheol Microcirc 2000;23(2-4):213-8.
- Fan Q, Wu C, Li L, Fan R, Wu C, Hou Q, He R. Biochim Biophys Acta 2001 Jun 15;1526(3):286-92.
- Hwang CM, Kim DI, Huh SH, Min BG, Park JH, Han JS, Lee BB, Kim YI, Ryu ES, Kim JW. J Cardiovasc Surg (Torino) 2002 Dec;43(6):891-4.
- Nakajima N, Mihara H, Sumi H. Biosci Biotechnol Biochem 1993 Oct;57(10):1726-30.
- Mihara H, Maruyama M, Sumi H. Southeast Asian J Trop Med Public Health 1992;23 Suppl 2:131-40.
- Kim YS, Pyo MK, Park KM, Hahn BS, Yang KY, Yun-Choi HS. Arch Pharm Res 1998 Aug;21(4):374-7.
- Hrzenjak T, Popovic M, Bozic T, Grdisa M, Kobrehel D, Tiska-Rudman L. Comp Biochem Physiol B Biochem Mol Biol 1998 Apr;119(4):825-32.
- Ziv E, Bendayan M. Microsc Res Tech 2000 May 15;49(4):346-52.