

# NattoZyme

## Nattokinase 36 mg

### NSK-SD™



Item # 54750, bottles of 90 softgels  
Item # 55100, bottles of 300 softgels

---

### The Possible Benefits of Nattokinase 36 mg NSK-SD™, a Dietary Supplement

- Provides nutritional support for the maintenance and enhancement of normal healthy endogenous fibrinolysis, the dissolution of the essential portion of the blood clot or thrombus\*
- Provides nutritional support for healthy blood pressure within normal levels\*

---

### Description

Nattokinase (NK) is a profibrinolytic serine protease originally extracted and purified from natto, a traditional fermented soybean food popular in Japan. The fermentation process includes incubating boiled soybeans with *Bacillus subtilis natto*. Current research suggests that NK may support healthy coagulation of blood within normal levels, and may be useful in the maintenance and enhancement of normal healthy endogenous fibrinolysis, the dissolution of the essential portion of the blood clot or thrombus.\* Maintenance of optimum functioning of the body's fibrinolytic/thrombolytic mechanisms may benefit the function of many bodily systems, in particular the cardiovascular system and the brain.\*

The importance of blood clotting is obvious in relationship to survival in cases of injury. But the increasing and excessive stickiness of blood can have other consequences. Antioxidants are supportive in protecting prostacyclin, a prostaglandin that thins blood, and antioxidants also scavenge free radicals, which are required to activate the blood clotting effects of thromboxane. These effects are mediated through the blood supply, they depend upon healthy circulation, and they have themselves full systemic manifestations.

Although early clinical studies utilized intravascular administration of thrombolytic agents, it is now clear that some agents may be successfully administered orally when encapsulated for delivery into the small intestine. For instance, clinical and animal studies demonstrate that the intestinal absorption of urokinase produces a prolonged level of activity in plasma together with a significant lytic effect on thrombi.

While investigating natural food sources for fibrinolytic activity, the University of Chicago researcher Dr. Hiroyuki Sumi discovered a potent fibrinolytic enzyme in a popular Japanese fermented food. His research group tested 173 foods including the traditional Japanese food called natto, made from boiled and fermented soybeans. Natto has been part of the Japanese diet for centuries, and the Japanese believed that it enhances cardiovascular health.\* Dr. Sumi's research group was surprised to find that this enzyme, nattokinase, has very potent fibrinolytic activity, stronger than that of plasmin or elastase, *in vivo*. Subsequent research has shown that NK is absorbed from the intestinal tract and degrades plasma fibrinogen. As an endogenous plasminogen activator, NK's thrombolytic activity can be maintained for a relatively long time.

\*THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THIS PRODUCT IS NOT INTENDED TO DIAGNOSE, TREAT, CURE, OR PREVENT ANY DISEASE.

In summary, research shows that nattokinase can be a valuable part of a cardiovascular health program, as it supports healthy coagulation of blood within normal levels and enhances fibrinolytic activity.\*

**Nattokinase NSK-SD™** - We tested recently introduced products and few meet the standards of Dr. Sumi, the discoverer of nattokinase, and Dr. Holsworth, the leading

U.S. researcher of nattokinase. We offer only the patented NSK-SD™ formulation which contains no Vitamin K2, the only form that has been tested for safety.\* Each batch is tested to ensure potency. All ingredients used in the culture medium during process of our nattokinase are certified non-GMO.

NSK-SD™ is a trademark of Japan BioScience Laboratory.

---

**Each 2 softgels contain:** NSK-SD™ (1440 FU) 72 mg

**Other ingredients:** Soybean oil, soybean lecithin, glycerin fatty acid ester and beeswax.

**Suggested Use:** As a dietary supplement, 1 to 2 capsules three times daily, or as directed by a healthcare practitioner. May be taken with or without food. If taken with anticoagulant drugs, use under medical supervision. Contraindicated in any condition associated with bleeding.

**Note:** FU indicates fibrinolytic activity, or the ability to dissolve blood clots.

---

#### References

- Abe T. Oral urokinase: absorption, mechanisms of fibrinolytic enhancement and clinical effect on cerebral thrombosis. *Folia Haematol Int Mag Klin Morphol Blutforsch* 1986;113:122-36.
- Alberts MJ. Hyperacute stroke therapy with tissue plasminogen activator. *Am J Cardiol* 1997;80:29D-34D; discussion 35D-39D.
- Baigent C, Collins R, Appleby P, et al. ISIS-2: 10 year survival among patients with suspected acute myocardial infarction in randomised comparison of intravenous streptokinase, oral aspirin, both, or neither. *BMJ* 1998;316:1337-1343.
- Chang CT, Fan MH, Kuo FC, et al. Potent fibrinolytic enzyme from a mutant of *Bacillus subtilis* IMR-NK1. *J Agric Food Chem* 2000;48:3210-6.
- Fujita M, Hong K, Ito Y, et al. Thrombolytic effect of nattokinase on a chemically induced thrombosis model in rat. *Biol Pharm Bull* 1995;18:1387-91.
- Fujita M, Hong K, Ito Y, et al. Transport of nattokinase across the rat intestinal tract. *Biol Pharm Bull* 1995;18:1194-6.
- Fujita M, Nomura K, Hong K, et al. Purification and (nattokinase) in the vegetable cheese natto, a popular soybean fermented food in Japan. *Biochem Biophys Res Commun* 1993;197:1340-7.
- Grignani G, Zucchella M, Brocchieri A, et al. Current concepts in coronary thrombolysis. *Haematologica* 1994;79:475-82.
- Kato T, Yamagata Y, Arai T, et al. Purification of a new extracellular 90-kDa serine proteinase with isoelectric point of 3.9 from *Bacillus subtilis* (natto) and elucidation of its distinct mode of action. *Biosci Biotechnol Biochem* 1992;56:1166-8.
- Ouriel K, Kandarpa K, Schuerr DM, et al. Prourokinase versus urokinase for recanalization of peripheral occlusions, safety and efficacy: the PURPOSE trial. *J Vasc Interv Radiol* 1999;10:1083-91.
- Sumi H, Hamada H, Nakanishi K, et al. Enhancement of the fibrinolytic activity in plasma by oral administration of nattokinase. *Acta Haematol* 1990;84:139-43.
- Sumi H, Hamada H, Tsushima H, et al. A novel fibrinolytic enzyme (nattokinase) in the vegetable cheese Natto; a typical and popular soybean food in the Japanese diet. *Experientia* 1987;43:1110-1.
- Urano T, Ihara H, Umemura K, et al. The profibrinolytic enzyme subtilisin NAT purified from *Bacillus subtilis* Cleaves and inactivates plasminogen activator inhibitor type 1. *J Biol Chem* 2001;276:24690-6.
- van Gorp EC, Brandjes DP, ten Cate JW. Rational antithrombotic therapy and prophylaxis in elderly, immobile patients. *Drugs Aging* 1998;13:145-57.
- Weichert W, Seifried E. [Fibrinolytic agents--who benefits when?]. *Ther Umsch* 1995;52:652-60.



**NutriCology®**, Inc.

2300 North Loop Road, Alameda, CA 94502

Phone: 800-545-9960 or 510-263-2000

Fax: 800-688-7426 or 510-263-2100

[www.nutricology.com](http://www.nutricology.com)

\*THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THIS PRODUCT IS NOT INTENDED TO DIAGNOSE, TREAT, CURE, OR PREVENT ANY DISEASE.