

# Opti-SEL™ Dual-Source Selenium Supplement

## DESCRIPTION

Opti-Sel™, provided by Douglas Laboratories®, is a dietary supplement of selenium in two forms: as the amino acid selenomethionine and as inorganic sodium selenate. Each tablet delivers 200 mcg of elemental selenium.

## FUNCTIONS

Selenium is a nutritionally essential trace element for humans and animals. The National Research Council's Recommended Dietary Allowance for selenium in adults ranges from 55 to 75 mcg per day depending on age and gender.

Selenium is a cofactor to about 10 selenoproteins in the body; the most important of these appears to be glutathione peroxidase (GPX). GPX uses glutathione to reduce hydrogen peroxide and thus protect cells and plasma against free radical injury. GPX activity depends on an adequate supply of dietary selenium. Recently, selenium as selenocysteine has been identified in the active center of type 1 and 3 iodothyronine deiodinases, two important enzymes regulating the formation and degradation of the active thyroid hormone, triiodothyronine (T3). Another important selenoprotein appears to be selenoprotein P, but its functions remain unclear. Selenium and vitamin E appear to have synergistic effects, since some signs of vitamin E deficiency in animals can be alleviated by dietary selenium. In the body, inorganic selenium has been shown to complex with heavy metals, such as mercury, cadmium and silver.

Opti-SEL provides both inorganic selenium as sodium selenate and organic selenium as selenomethionine. Both forms serve as readily available precursors for selenocysteine which is used for incorporation into the selenoproteins and enzymes. However, the body tightly regulates levels of inorganic selenium and selenocysteine, while selenomethionine serves as an available storage form of biologically active selenium. Adequate storage levels depend on a steady supply of dietary selenomethionine, since the body cannot synthesize it. Thus, providing both the active and the storage forms of selenium, i.e., selenate and selenomethionine, ensures a constant supply of selenium.

Dietary selenium is generally well absorbed and utilized in the body. Selenomethionine is absorbed with almost 100% efficiency, while selenate absorption is usually between 50 and 100% efficient. Selenium status is regulated by adjustments in urinary excretion.

The richest food sources of selenium are seafood and organ meats, followed by muscle meats, cereals and grains, and dairy products. Fruits and vegetables are typically low in selenium, and low selenium status has been reported in vegetarians.

## INDICATIONS

Opti-Sel may be a useful nutritional adjunct for individuals who wish to increase their intake of selenium from both organic and inorganic sources.

## FORMULA (SEL)

Each tablet contains:

Selenium (selenomethionine).....	50mcg
Selenium (sodium selenate).....	150mcg

## SUGGESTED USE

One tablet daily as a dietary supplement, or as directed by a physician. Take with food.

## Opti-SEL™ Dual-Source Selenium Supplement

### SIDE EFFECTS

No adverse side effects have been reported.

### STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

### REFERENCES

- Andersen O, Nielsen JB. Effects of simultaneous low-level dietary supplementation with inorganic and organic selenium on whole-body, blood, and organ levels of toxic metals in mice. *Environ Health Perspect* 1994;102 Suppl. 3:321-324.
- Cirelli A, Ciardi M, De Simone C, et al. Serum selenium concentration and disease progress in patients with HIV infection. *Clin Biochem* 1991;24:211-214.
- Dworkin BM. Selenium deficiency in HIV infection and the acquired immunodeficiency syndrome (AIDS). *Chem Biol Interact* 1994;91:181-186.
- Dworkin BM, Antonicchia PP, Smith F, et al. Reduced cardiac selenium content in the acquired immunodeficiency syndrome [see comments]. *JPEN J Parenter Enteral Nutr* 1989;13:644-647.
- Dworkin BM, Rosenthal WS, Wormser GP, et al. Abnormalities of blood selenium and glutathione peroxidase activity in patients with acquired immunodeficiency syndrome and aids-related complex. *Biol Trace Elem Res* 1988;15:167-177.
- Dworkin BM, Rosenthal WS, Wormser GP, Weiss L. Selenium deficiency in the acquired immunodeficiency syndrome. *JPEN J Parenter Enteral Nutr* 1986;10:405-407.
- Kadrabová J, Madaric A, Kováčiková Z, Ginter E. Selenium status, plasma zinc, copper, and magnesium in vegetarians. *Biol Trace Elem Res* 1995;50:13-24.
- Larsen PR, Berry MJ. Nutritional and hormonal regulation of thyroid hormone deiodinases. *Annu Rev Nutr* 1995;15:323-352.
- Lehr D. A possible beneficial effect of selenium administration in antiarrhythmic therapy. *J Am Coll Nutr* 1994;13:496-498.
- Olmsted L, Schrauzer GN, Flores-Arce M, Dowd J. Selenium supplementation of symptomatic human immunodeficiency virus infected patients. *Biol Trace Elem Res* 1989;20:59-65.
- Roy M, Kiremidjian-Schumacher L, Wishe HI, Cohen MW, Stotzky G. Supplementation with selenium restores age-related decline in immune cell function. *Proc Soc Exp Biol Med* 1995;209:369-375.
- Schrauzer GN, Sacher J. Selenium in the maintenance and therapy of HIV-infected patients. *Chem Biol Interact* 1994;91:199-205.
- Sun E, Xu H, Liu Q, Zhou J, Zuo P, Wang J. The mechanism for the effect of selenium supplementation on immunity. *Biol Trace Elem Res* 1995;48:231-238.
- Tarp U. Selenium and the selenium-dependent glutathione peroxidase in rheumatoid arthritis. *Dan Med Bull* 1994;41:264-274.
- Thompson KM, Haibach H, Sunde RA. Growth and plasma triiodothyronine concentrations are modified by selenium deficiency and repletion in second-generation selenium-deficient rats. *J Nutr* 1995;125:864-873.

**For more information on Opti-SEL visit [douglaslabs.com](http://douglaslabs.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.

Manufactured by  
Douglas Laboratories  
600 Boyce Road  
Pittsburgh, PA 15205  
800-245-4440  
[douglaslabs.com](http://douglaslabs.com)



**You trust Douglas Laboratories.  
Your patients trust you.**