

## **Copper**

### **Amino Acid Chelate**

#### **DESCRIPTION**

Copper amino acid chelate provides 2 mg of the elemental mineral copper in each capsule.

#### **FUNCTIONS**

Copper is an essential trace element and functions as a cofactor of many enzymes involved in antioxidant defense (superoxide dismutase), connective tissue metabolism (lysyl oxidase), and amine metabolism (amine oxidases). Superoxide dismutase (SOD) is a key antioxidant enzyme in the body's cellular fluid (the cytosol) and mitochondria (the cell's powerhouses). SOD destroys harmful superoxide anions that are either generated during normal energy metabolism or coming from environmental pollution. Cytosolic SOD activity is dependent on sufficient levels of copper and zinc. Many studies have shown that increasing dietary intake of these essential trace elements may increase the activity of SOD considerably. As the essential cofactor of several amine oxidases, copper assumes a pivotal role in the metabolism and degradation of amines. Monoamine oxidase is involved in the inactivation of catecholamines. It reacts with substances such as serotonin, norepinephrine, tyramine, and dopamine. Diamine oxidase inactivates histamine and polyamines. Lysyl oxidase acts on the lysyl side chains of collagen and elastin, providing the basis for cross-link formation within connective tissues.

Copper is also important in many aspects of iron metabolism (ceruloplasmin, ferroxidase), mitochondrial energy and phospholipid metabolism (cytochrome c oxidase), and dopamine metabolism (dopamine  $\beta$ -hydroxylase, tyrosinase). In the nervous system, copper is required for myelin formation and maintenance, as well as for normal neurotransmission. Absorption of free, ionic copper from foods is about 30-40% efficient, and can be severely compromised by free zinc and some antagonistic ligands in food, such as phytate. Compared to free copper, the copper amino acid chelate is bioavailable and less influenced by antagonistic factors. Several studies showed that amino acid chelate leads to excellent tissue retention of copper, as evidenced by effective stimulation of SOD activity.

#### **INDICATIONS**

Copper may be a useful nutritional adjunct for individuals who wish to increase their intake of copper.

#### **FORMULA (7020)**

Each capsule contains:

Copper (amino acid chelate) .....2 mg

#### **SUGGESTED USE**

One capsule daily as a dietary supplement, or as directed by a healthcare professional.

#### **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.

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#### REFERENCES

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**For more information on Copper Amino Acid Chelate 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.

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