



# Selenium CWS

## MINERAL SUPPLEMENT



### Antioxidant nutrient support

- Protects against oxidative stress\*
- Assists in the formation of antioxidant selenoproteins
- Excellent source of selenium

### Convenient cold water soluble (CWS) liquid format

- Can be dropped directly into mouth or added to beverages

### Supplement Facts

Serving Size 1 Drop (0.065 ml) / Servings per Container about 230

Each Drop Contains		% DV*
Selenium (sodium selenite)	100 mcg	143%

\* Daily Values (DV)

Other ingredients: Purified water, citric acid

**Recommended Adult Dose:** Take one drop two times daily with a meal or as recommended by your healthcare practitioner. If preferred, Selenium CWS can be mixed with juice or water.

**Product Size:** 0.5 fl oz (15 ml)

**Product Code:** 01180



### Scientific Rationale:

Selenium is needed to form selenoprotein enzymes that protect cells against oxidative stress and regulate thyroid function, including glutathione peroxidases (GPxs), thioredoxin reductases (TRxs), iodothyronine deiodinases (DIs), and various antioxidant selenoproteins such as selenoprotein P (SePP).<sup>1,2</sup> The thyroid has the highest concentration of selenium of any organ - GPx enzymes expressed in the thyroid protect against lipid peroxidation by detoxifying accumulated hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>), and DI enzymes are needed to catalyze the conversion of T4 to T3.<sup>2</sup>

Selenoproteins also help to support the function of activated T-cells, which are especially sensitive to oxidative stress.<sup>3</sup> *In vitro* studies indicate that T-cells with low levels of selenoproteins have decreased function due to impaired response to T-cell-receptor stimulation.<sup>4</sup> In a 15-week long, double-blind, placebo-controlled clinical trial conducted on 22 healthy adults with low selenium status, daily selenium supplementation supported optimal immune function and increased T helper cell levels. Participants were 20–47 years old,

and had serum selenium levels <1.2 µmol/L. Participants were randomized to receive a placebo capsule, or either 50 or 100 mcg of selenium selenite per day. Supplementation with 100 mcg of selenium per day increased the selenite-exchangeable pool (an indicator for the functional pool of selenium within the body) by 45%, in comparison with the placebo group. This improvement in selenium status was associated with a significant increase in both cytosolic GPx levels and phospholipid GPx activity. Selenium supplementation also increased the percentage of total T cells and increased the number of CD4<sup>+</sup> (T helper) cells.<sup>5</sup>

In a 12-week long parallel clinical trial conducted on 119 healthy participants with low serum selenium levels (< 110 ng/ml), supplementation with 50 µg of selenium significantly increased gene expression of the antioxidant enzyme selenoprotein W (SEPW1), compared to participants in the placebo group.<sup>6</sup>

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#### REFERENCES

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\*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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