**Discussion**

The need for selenium is well recognized in human and animal nutrition. Although it was believed, in the 1930's, to be the toxic portion of seleniferous plants, many decades of research on the occurrence, metabolism, and toxicity of selenomethionine (the natural organic food form of selenium) ultimately led to selenium's acceptance as a dietary supplement.†[1]

Selenomethionine cannot be synthesized by higher animals. Select strains of yeast and bacteria that are grown in selenium-rich media incorporate selenium as selenomethionine and synthesize it analogously with methionine. ‡[2] The selenomethionine in Selen-E is synthesized by brewer’s yeast.*

Unlike the selenite or selenate forms of selenium, only selenomethionine is incorporated into body proteins.||[3] After absorption in the small intestine, any amount not immediately needed is stored in organs with a high rate of protein synthesis, such as the brain. Selenomethionine is released into plasma albumin from storage tissue when needed.‡[4, 5] The content in skeletal muscle reflects dietary intake.‡[6] Selenomethionine’s half-life is about one-and-a-half times that of selenite.‡[7] In nursing mothers supplementing with selenomethionine (compared to mothers consuming a selenite form of supplementation), significantly more selenium appeared in the milk.*‡[8]

Compared to selenite or selenate, selenomethionine has a differential effect on lymphocyte proliferation and other immunological biomarkers.‡[9] A 1991 study demonstrated, for the first time, the immunostimulatory properties of selenium-enriched yeast in elderly humans.‡[10] Selenomethionine has been shown to protect amino acids and proteins from radiation damage and, in mice, against UV-induced skin damage.*‡[11]

Both selenium and methionine are needed for glutathione peroxidase synthesis. In an individual with adequate methionine, selenomethionine supplementation causes tissue levels of selenium to increase proportionate to the dosage. Thereafter, a steady state is established. This takes about six weeks of supplementation in the erythrocytes.*

Typical dietary selenium intakes in the US range from 80 to 165 mcg/day. The current total daily amount of selenium considered safe for an American on a “normal” diet is 200 mcg.*
## Antioxidants

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All XYMOGEN® Formulas Meet or Exceed cGMP Quality Standards.

**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.**

### References

1. Schrauzer GN. Selenomethionine: a review of its nutritional significance, metabolism and toxicity. JN 2000;130:1665-1656 http://jn.nutrition.org/cgi/content/full/130/7/1653

### Selen-E 400™ Supplement Facts

<table>
<thead>
<tr>
<th>Serving Size: 1 Softgel</th>
<th>Amount Per Serving</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin E (as d-Alpha Tocopherol)</td>
<td>400 IU</td>
<td>1333%</td>
</tr>
<tr>
<td>Selenium (as selenomethionine)</td>
<td>50 mcg</td>
<td>71%</td>
</tr>
</tbody>
</table>

**Daily Value not established**

**Other Ingredients:** Gelatin, glycerin, beeswax, and lecithin.

**DOES NOT CONTAIN:** Wheat, gluten, corn protein, yeast, animal or dairy products, artificial colors, sweeteners, or preservatives.

**CAUTION:** Keep out of reach of children.

**STORAGE:** Keep tightly closed in a cool, dry place.

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