



Available in 120 capsules

### Discussion

#### Shilajit Extract (*Asphaltum punjabinum*)

Meaning “conqueror of mountain” in Sanskrit, shilajit is a rasāyana of Ayurveda with a rich history of use in diverse folk medicine traditions from all over the world. A naturally occurring substance that is found in the high rocks of mountain ranges, including the Andean, Caucasus, Himalayan, Hindu Kush, Pamir, and Sayan ranges, shilajit is formed from decomposed plant material that has been transformed over centuries through darkness and pressure, eventually emerging from the rocky crevasses that it is harvested from today.\*<sup>1</sup>

Shilajit extract is composed of humic substances and trace elements, and modern research suggests that it has powerful antioxidant activity.<sup>1-3</sup> In an animal model, treatment with shilajit extract increased the activities of superoxide dismutase, catalase, and glutathione peroxidase in a dose-dependent manner.<sup>3</sup> In other research, humic substances, as found in shilajit extract, have shown an effect on the distribution, metabolism, and absorption of heavy metals.<sup>4-7</sup> In a human study, it was shown that daily consumption of a complex of humic substances with trace elements for 6 weeks decreased the uptake of cadmium in production workers from an alkaline battery factory.\*<sup>8</sup>

#### Ethylenediaminetetraacetic acid (EDTA)

Well-known for its use as an intravenous chelating agent, the amino acid EDTA can also be administered orally. It is thought to detoxify by chelating with metals in the gastrointestinal tract.<sup>9,10</sup> More studies are needed to validate the effects of oral EDTA. Owing to EDTA's metal-binding ability, it is important to supplement with essential trace minerals like iron, copper, zinc, selenium, iodine, chromium, manganese, and molybdenum during treatment.\*

#### Garlic Clove Extract (*Allium sativum*)

Allicin is the primary bioactive compound in garlic clove extract, and research has shown its potential to support processes that circumvent toxic metal accumulation.<sup>11</sup> In animal and in vitro models, garlic clove extract reduced cellular exposure to, or accumulation of, lead, cadmium, and mercury.<sup>12-17</sup> In other research, garlic clove extracts have demonstrated an ability to support detoxification pathways.\*<sup>18</sup>

## Clinical Applications

- » Helps Protect Tissues From Oxidative Stress\*
- » Supports Detoxification\*

*CheleX™ is designed to help the body rid itself of damaging oxidative elements. It features specialized ingredients, such as EDTA, shilajit extract, chlorella, and antioxidant-stimulating nutrients. These ingredients perform in concert to support your health when your body is challenged by environmental toxins, such as heavy metals.\**

#### Chlorella (*Chlorella vulgaris*)

A nutrient-dense microalgae, chlorella is an excellent source of chlorophyll, a detoxifying substance that is thought to bind and sequester toxic metals for elimination. Its beneficial effect of sequestering toxic metals, including methylmercury, cadmium, and lead, is supported by animal research.<sup>18,19</sup> In a mouse study that tested the effects of chlorella supplementation on lead, researchers observed a dramatic 66.03% reduction in serum lead levels in the treatment group compared with the placebo group.\*<sup>18</sup>

#### N-Acetyl-L-Cysteine (NAC) and Alpha-Lipoic Acid (ALA)

Exposure to heavy metals increases free radical production in the body, leading to oxidative stress.<sup>20</sup> Research suggests a beneficial role for antioxidants as free radical scavengers that can help reduce oxidative stress, including the oxidative stress that results from toxic metal exposure.<sup>21</sup>

NAC and ALA are well-known antioxidants with complementary mechanisms of action. NAC has the ability to quench reactive oxygen species and support glutathione production.<sup>22</sup> ALA binds with and reduces the oxidative power of toxic metals like copper, arsenic, cadmium, and mercury.\*<sup>23-26</sup>

## CheleX™ Supplement Facts

Serving Size: 4 Capsules

	Amount Per Serving	%Daily Value
Shilajit Extract ( <i>Asphaltum punjabianum</i> ) (10.3% dibenzo- $\alpha$ -pyrones & dibenzo- $\alpha$ -pyrone chromoproteins)	600 mg	**
Calcium Disodium EDTA	300 mg	**
Chlorella ( <i>Chlorella vulgaris</i> )	300 mg	**
N-Acetyl-L-Cysteine	200 mg	**
Alpha-Lipoic Acid	100 mg	**
Allicin (from garlic extract) ( <i>Allium sativum</i> ) (bulb)	6 mg	**

\*\* Daily Value not established.

**Other Ingredients:** Capsule (hypromellose and water), microcrystalline cellulose, stearic acid, magnesium stearate, and silica.

**DIRECTIONS:** Take two to four capsules daily, or as directed by your healthcare practitioner.

Consult your healthcare practitioner prior to use. Individuals taking blood thinners, insulin, or other medication should discuss potential interactions with their healthcare practitioner. Do not take if you are pregnant or lactating. Do not use if tamper seal is damaged.

**STORAGE:** Keep closed in a cool, dry place out of reach of children.

**FORMULATED TO EXCLUDE:** Wheat, gluten, corn, yeast, soy, animal and dairy products, fish, shellfish, peanuts, tree nuts, egg, sesame, ingredients derived from genetically modified organisms (GMOs), artificial colors, and artificial sweeteners.



## References

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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.