



# CLEAR WAY COFACTORS®



Supplement Facts		
Serving Size: 3 Capsules Servings Per Container: 40	Amount Per Serving	% Daily Value
Thiamin (Vitamin B1) (as thiamine HCl)	100mg	8333%
Vitamin B6 (as pyridoxal 5-phosphate)	20mg	1176%
Pantothenic acid (as d-calcium pantothenate)	100mg	2000%
Selenium (as selenomethionine)	200mcg	364%
<b>Proprietary Blend</b>	1405mg	**
<small>Haritaki (Terminalia chebula) fruit extract, Dandelion (Taraxacum officinale) root extract, Bacopa monnieri leaf extract, Gotu kola (Centella asiatica) whole plant (or herb) extract, Nattokinase (20,000 fu/g), Pine (Pinus massoniana) bark extract, Pomegranate (Punica granatum) pericarp extract, R-Lipoic acid, Quercetin dihydrate</small>		
*Daily Value not established		
Other Ingredients: Vegetable (cellulose) capsule, silicon dioxide, vegetable stearic acid		

Clear Way Cofactors® is a proprietary blend of botanically-sourced polyphenolic antioxidants, R-Lipoic Acid (RLA), B vitamins, selenium, and high-potency nattokinase designed to maximally support metal detoxification pathways.

## POTENT BOTANICALS INITIATE INTRACELLULAR DETOXIFICATION

The optimal way to support heavy metals detoxification is to stimulate the activity of intracellular detoxification pathways, while also upregulating pathways that attenuate oxidative stress. The plant kingdom offers an abundance of botanicals that enhance intracellular detoxification pathways, thereby assisting in the detoxification of endogenous and exogenous toxins, repairing damaged proteins, and quenching oxidative stress. Clear Way Cofactors® contains a synergistic combination of the most potent plant compounds for activating these vital intracellular pathways, setting the stage for successful detoxification.

**Haritaki** (Terminalia chebula) is a fruit that has been used for thousands of years in traditional Indian Ayurvedic medicine. In fact, in the Ayurvedic Materia Medica, haritaki is lauded as “the King of Medicines,” with broad applications including anti-inflammatory and antimicrobial properties.<sup>1</sup> Modern-day scientific research indicates that haritaki supports antioxidant and detoxification pathways in the liver and kidneys, facilitating the transformation and elimination of toxins.<sup>2,3</sup> It also protects cell membranes from oxidative damage, preserving the cellular structure critical for successful detoxification.<sup>4</sup>

**Pine bark extract** (Pinus massoniana) comes from an evergreen tree native to Taiwan and China. It is rich in proanthocyanidins, plant-based compounds with free radical-scavenging and glutathione-boosting properties.<sup>5,6</sup>

**Pomegranate extract** (Punica granatum) is an excellent source of ellagic acid, which exerts anti-inflammatory properties through the upregulation of the Nrf2 pathway.<sup>7</sup> Ellagic acid is metabolized by intestinal bacteria into urolithin A, a compound that supports gut barrier integrity, a critical component for successful detoxification.<sup>8</sup>

Ellagic acid and two other pomegranate polyphenols, punicalin and punicalagin, also increase the activity of the antioxidant enzymes superoxide dismutase and glutathione peroxidase while inhibiting lipid peroxidation, thus protecting cell membranes and other essential lipid-based molecules from oxidative damage.<sup>9</sup>

**Gotu kola** (Centella asiatica) and **Bacopa extract** (Bacopa monnieri) have long been used in Ayurvedic medicine for revitalizing the brain and nervous system. Their neuroprotective properties stabilize neural cells, protecting the nervous system from neurotoxic compounds such as bacterial lipopolysaccharides (LPS) and methylmercury.<sup>10,11</sup>

**Dandelion root extract** (Taraxacum officinale) is a staple botanical in traditional Western herbalism, long utilized for its hepatoprotective properties. Dandelion initiates diuresis, enhancing urinary elimination of toxins. It also protects the liver from oxidative stress by upregulating the Nrf2 antioxidant pathway, increases bile flow, and inhibits inflammation caused by LPS.<sup>12,13,14</sup>

## BREAK DOWN BIOFILM FOR BETTER DETOXIFICATION

Biofilm is a consortium of microorganisms embedded in a sticky extracellular matrix. When microbes team up to form biofilms, they collectively enhance their resistance to antibiotics and other antimicrobials, establishing stubborn infections. Also, biofilms may impair detoxification and absorption of nutrients. Biofilms can form in numerous places throughout the body, including the gastrointestinal tract, mouth, and blood vessels.<sup>15,16,17</sup>

**Nattokinase** is an enzyme extracted from the Japanese fermented soybean delicacy, natto. It has strong fibrinolytic properties that allow it to break down biofilm.<sup>18,19</sup> The clearance of biofilm enhances antimicrobial protocols and may also augment detoxification.

## BENEFITS & APPLICATIONS:

- Enhances antioxidant enzyme activity and glutathione production <sup>2,3,4,5,6,7,9,14</sup>
- Stabilizes cell membranes <sup>4,28</sup>
- Protects the nervous system from toxins <sup>6,10,11</sup>
- Alleviates heavy metals toxicity <sup>20,21,22,23,27,29</sup>
- Supports gut barrier integrity <sup>8</sup>
- Breaks down biofilm <sup>19</sup>

## ALLEVIATE HEAVY METALS TOXICITY AND OXIDATIVE STRESS WITH R-LIPOIC ACID

Alpha lipoic acid is an organosulfur compound commonly found in mitochondria, where it serves as a critical cofactor for energy-generating pathways. ALA also aids the activity of intrinsic antioxidant pathways, regenerating the oxidized forms of vitamins C and E and increasing intracellular glutathione levels, and alleviates the body burden of heavy metals.

Alpha lipoic acid supplements generally are a mixture of two enantiomers or molecules that are mirror images of each other, an *S*-enantiomer and an *R*-enantiomer. Such mixtures demonstrate limited bioavailability, with only 30 percent of the compound reaching circulation after hepatic processing and intestinal absorption. However, the *R* enantiomer of ALA, **R-lipoic acid**, is significantly more bioavailable than *S*- and *R*-enantiomer mixtures, and may offer superior therapeutic effects.<sup>20</sup>

## B VITAMINS AND SELENIUM SUPPORT DETOXIFICATION PATHWAYS

B vitamins serve as cofactors for hundreds of enzymes in the body, including those involved in vital detoxification pathways. **Vitamin B1 (thiamine)** is a vital cofactor for transketolase, an enzyme involved in the pentose phosphate pathway, which is essential for antioxidant defenses. Heavy metal toxicity hampers transketolase activity, disrupting thiamine homeostasis and antioxidant balance. Supplementation with B1 may correct heavy metal-induced thiamine deficiency and has been found to bolster antioxidant defenses and to reduce the body burden of mercury, arsenic, and lead.<sup>21,22,23</sup>

**Vitamin B5**, included in our formula as d-calcium pantothenate, may support glutathione production through its vital role in ATP production.<sup>24</sup> It also has hepatoprotective effects via its free radical-scavenging activities.<sup>25</sup>

**Vitamin B6** (pyridoxal-5-phosphate) alleviates oxidative stress, caused by elevated homocysteine, by redistributing glutathione from the liver into the blood plasma.<sup>26</sup> It may also assist in lead detoxification by chelating or interfering with intestinal absorption of the heavy metal.<sup>27</sup>

**Selenium** is a micronutrient with diverse functions throughout the body. In the context of detoxification, selenium is an essential cofactor for glutathione peroxidase, an enzyme that detoxifies damaging peroxide radicals into innocuous alcohol molecules and oxygen, thus protecting cells from oxidative damage.<sup>28</sup> Glutathione peroxidase activity is an indirect marker of selenium sufficiency, with selenium deficiency significantly inhibiting enzymatic activity. Dietary selenium also protects against and alleviates mercury toxicity by inhibiting the binding of mercury to cellular targets in the thioredoxin and glutathione antioxidant systems, thus preserving the integrity of the body's antioxidant defenses.<sup>29</sup>

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