

# EndoAxis

## Formula 3

### DETOX SUPPORT

Focused nutrients to optimize phase 2 and phase 3 detox.

### AT A GLANCE

Sex hormones are cholesterol-based signaling molecules (“steroid hormones”). This means that when they reach an expiration in circulation, our liver primarily (as well as fat tissue and colon) must transform those fat-based structures into a water-soluble intermediate through phase 1 detox (the CYP450 enzymes). Those intermediates then undergo phase 2 transformation through glucuronidation (UGT), Sulfation (SULT), Methylation (COMT), Acetylation (NAT) or direct glutathione reduction (GST). Once conjugated, these neutralized by-products can be easily bound to bile to excrete into urine or stool, a process called phase 3 detoxification.

Phase 2 detoxification of estrogen is dependent on several phase 2 enzymes, including methylation (COMT), Sulfation (SULT), glucuronidation (UGT) AND glutathione reduction. When we capture an imbalance or “backlog” of 2-OH estrogens, and witness lower production of 2-methoxy estrogens, OR when we see high levels of 16-OH estrogens, there may be concern for sluggish phase 2 and phase 3 detox.

Whenever we address phase 1 or phase 2 detox, it is critical to also support phase 3, as the final elimination pathway of any hormone needs to be working optimally for all other upstream conjugation to occur in harmony with the body.

Our evidence-based formulation targets phase 2 detox predominately through the use of folate-independent methylation pathways, sulfation, glutathione reduction and glucuronidation assistance.

### Meet Restore

Designed to move, alter and transform our detox intermediates into less reactive and more easily eliminated by-products. Supporting our hormone balance.



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### KEY BENEFITS



Optimizes phase 2 and phase 3 detox pathways



Improves biliary function



Reduces oxidative stress while balancing hormones

## FORMULA ANALYSIS

### CATECHOL-O-METHYLTRANSFERASE SUPPORTERS

- Blended **magnesium malate** and **glycinate**, with a total of over 300 mg per day to optimize COMT activity[1].
- **L-methionine** and **L-serine** support folate methylation without the direct use of methyl-folate, while also encouraging direct SAME production[2].
- **N-acetyl cysteine** and **taurine** included to support sulfation and glutathione reduction, while also providing biliary support[3][4].
- **Trimethyl glycine** is added at a therapeutic dose of 1 g daily for folate-independent methylation support[5].
- Targeted **B vitamins** for COMT and broad methylation and sulfation support, including calcium methyl-folate, hydroxocobalamin, niacinamide, riboflavin, thiamine and pyridoxal-5-phosphate.

### TRUBROC – SULFORAPHANE

We have partnered with the creators of TruBroc, a company that prides themselves on creating bio-active, potent, and 3rd party tested Sulforaphane to maximize our detox formulations. Sulforaphane is an antioxidant formed when myrosinase transforms glucoraphanin, a glucosinolates found in broccoli sprouts. Once transformed, sulforaphane acts as a potent activator of CYP450 enzymes, enhancing phase 1 detoxification pathways, while also supporting sulfation (a phase 2 detoxification step for estrogens). Sulforaphane is considered one of the most potent enhancers for cellular detoxification, and works upstream to protect DNA from oxidative stress and aging[6]. Through this enhancement, sulforaphane helps convert estrogen into less harmful metabolites, reducing estrogens burden on the body.

Contains TruBroc (a trademark of Brassica Protection Products, LLC)– a highly bio-available glucoraphanin that converts to long-lasting sulforaphane in our gut.

## SUPPLEMENT FACTS

Serving Size 2 Capsules  
Servings Per Container 60

Amount Per Serving		% Daily Value
Thiamin (as thiamin hydrochloride)	12.5 mg	1042%
Riboflavin (as riboflavin 5-phosphate)	12.5 mg	962%
Niacin (as niacinamide)	12.5 mg	78%
Vitamin B <sub>6</sub> (as pyridoxal-5-phosphate)	10 mg	588%
Folate (as calcium l-5-methyltetrahydrofolate)	200 mcg	50%
Vitamin B <sub>12</sub> (as hydroxocobalamin)	125 mcg	5208%
Magnesium (as 50% magnesium glycinate and 50% magnesium malate)	26.3 mg	6%
Molybdenum (as sodium molybdate)	9.9 mcg	22%
Trimethylglycine (as betaine anhydrous)	250 mg	†
L-Methionine	250 mg	†
Taurine	200 mg	†
N-acetyl-L-cysteine	100 mg	†
Broccoli ( <i>Brassica oleracea italica</i> ) (seed) powder extract (13% glucoraphanin) (TrueBroc®)	25 mg	†
L-Serine	25 mg	†

† Daily Value not established

**Other ingredients:** Vegetable capsule (hypromellose), microcrystalline cellulose, magnesium stearate and silicon dioxide.

## SUGGESTED USE

Take 2 capsules 2 times a day with a meal or as directed by your healthcare practitioner.

**CAUTION:** Do not use if pregnant or nursing. Consult your physician before use if you have a medical condition, or taking any medication. Do not use product if the safety seal is broken or damaged. Keep out of reach of children.

We formulated this product WITHOUT the use of methyl-B12. This was a decision made intentionally, as we want our products to be tolerated by all patients and intended for longer term use without concern. An additional methyl-B12 complex could be considered for short term or pulsed into the formulation as needed, but we leave that up to your professional discretion.

## MADE WITHOUT

Corn, soy, or wheat.

\*These statements have not been evaluated by the Food & Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

## REFERENCES

1. Bastos P, Araújo JR, Azevedo I, Martins MJ, Ribeiro L. Effect of a natural mineral-rich water on catechol-O-methyltransferase function. *Magnes Res.* 2014 Jul-Sep;27(3):131-41. doi: 10.1684/mrh.2014.0369. PMID: 25560240.
2. Mahmoud AM, Ali MM. Methyl Donor Micronutrients that Modify DNA Methylation and Cancer Outcome. *Nutrients.* 2019 Mar 13;11(3):608. doi: 10.3390/nu11030608. PMID: 30871166; PMCID: PMC6471069.
3. Schaffer S, Kim HW. Effects and Mechanisms of Taurine as a Therapeutic Agent. *Biomol Ther (Seoul).* 2018 May 1;26(3):225-241. doi: 10.4062/biomolther.2017.251. PMID: 29631391; PMCID: PMC5933890.
4. Kwon Y. Possible Beneficial Effects of N-Acetylcysteine for Treatment of Triple-Negative Breast Cancer. *Antioxidants (Basel).* 2021 Jan 24;10(2):169. doi: 10.3390/antiox10020169. PMID: 33498875; PMCID: PMC7911701.
5. Steenge GR, Verhoef P, Katan MB. Betaine supplementation lowers plasma homocysteine in healthy men and women. *J Nutr.* 2003 May;133(5):1291-5. doi: 10.1093/jn/133.5.1291. PMID: 12730412.
6. Houghton CA. Sulforaphane: Its "Coming of Age" as a Clinically Relevant Nutraceutical in the Prevention and Treatment of Chronic Disease. *Oxid Med Cell Longev.* 2019 Oct 14;2019:2716870. doi: 10.1155/2019/2716870. PMID: 31737167; PMCID: PMC6815645.