

# MedCaps DPO™

## Dual-Phase Optimizers\*



Available in 120 capsules

### Discussion

The term “Dual-Phase Optimizers” refers to those substances with the ability to simultaneously influence and “optimize” the activity of certain phase I and phase II detoxification enzyme systems. Optimizers generally upregulate or induce phase II enzymes; however, optimizing phase I enzymes may mean downregulating them, without totally inhibiting them, when they are too high. Dual-phase optimizers may further balance the phases of detoxification by supporting antioxidant defense systems and binding free radicals formed between the two phases.\*

Examples of dual-phase optimizers in MedCaps DPO™ include ellagic acid from pomegranate, catechins from green tea extract, and glucosinolates from watercress powder. Ellagic acid induces phase II enzymes at the gene level and ensures these are not over-induced by modulation of CYP1A (cytochrome P450 1A) activities.<sup>[1,2]</sup> In addition, ellagic acid can bind directly to DNA to protect it and can also bind directly to some toxic substances to promote their excretion. The catechins in green tea support antioxidant activity and may bind directly to toxic substances as well, performing dual functions during detoxification. When toxic substances are encountered, catechins modulate detoxification by limiting phase I enzyme production.<sup>[3]</sup> Glucosinolates are precursors to isothiocyanates. Watercress, in particular, is metabolized by gut flora into phenylethyl isothiocyanate (PEITC), which, like the other ingredients above, can selectively inhibit phase I enzymes and induce the activities of phase II enzymes.\*<sup>[4]</sup>

Liver detoxification is further supported with the inclusion of silymarin (milk thistle seed extract), artichoke leaf extract, and alpha-lipoic acid, all of which are selected for their hepatoprotective properties. These key players also promote glutathione production and assist with antioxidant protection.\*<sup>[5-7]</sup>

Additional ingredients in this formula are present to support vital phase II detoxification pathways. Key ingredients that support methylation include methylsulfonylmethane (MSM), methylcobalamin (B12), and 5-methyltetrahydrofolate (folate).<sup>[9]</sup> 5-methyltetrahydrofolate

### Clinical Applications

- » Supports Balanced Detoxification (Phases I & II)\*
- » Supports Liver Health and Energy Generation\*
- » Promotes a Variety of Phase II Pathways\*
- » Supports Natural Antioxidant Mechanisms\*

*MedCaps DPO™ is formulated to support phase I and phase II detoxification, hence the term “Dual-Phase Optimizers.” Pomegranate extract, catechins, glucosinolates, milk thistle extract, artichoke extract, alpha-lipoic acid, methylsulfonylmethane (MSM), N-acetyl-L-cysteine (NAC), and calcium D-glucarate tetrahydrate support critical steps in the complex process of detoxification—a function essential to overall health and vitality. This unique formula provides activated B vitamins for enhanced bioavailability, including 5-methyltetrahydrofolate (5-MTHF) as Quatrefolic® for optimal folate utilization. MedCaps DPO provides antioxidant support to minimize the damaging effects of free radicals generated between the two phases.\**

(5-MTHF) is present as Quatrefolic® (a stable, bioavailable form of folate) to support methylation, energy generation, and phase I and phase II activity. Calcium D-glucarate has been added to support glucuronidation. Sulfate donors sodium sulfate and N-acetyl-cysteine (NAC) are especially important in cases of heavy-metal burden because they support glutathione production and the sulfation pathway.\*<sup>[9-13]</sup>

MedCaps DPO is designed to be part of a comprehensive detoxification protocol that includes adequate high-quality protein, carbohydrates, fats, and fiber. The resulting combination provides micronutrients to support the active phases of detoxification and macronutrients to support energy production, amino acid conjugation, and elimination.\*

## MedCaps DPO™ Supplement Facts

Serving Size: 2 Capsules

	Amount Per Serving	%Daily Value
Vitamin B6 (as pyridoxal 5'-phosphate)	25 mg	1,471%
Folate (as [6S]-5-methyltetrahydrofolic acid, glucosamine salt) <sup>S1</sup>	340 mcg DFE	85%
Vitamin B12 (as methylcobalamin)	100 mcg	4,167%
Artichoke Extract ( <i>Cynara scolymus</i> )(leaves or inflorescences)	300 mg	**
Watercress ( <i>Nasturtium officinale</i> )(aerial parts)	250 mg	**
Milk Thistle Extract ( <i>Silybum marianum</i> )(seed)(30% silybins)	131.25 mg	**
Pomegranate Extract ( <i>Punica granatum</i> )(whole fruit)(30% punicalagins A+B and punicalins A+B)	125 mg	**
Alpha-Lipoic Acid	100 mg	**
N-Acetyl-L-Cysteine	100 mg	**
Sodium Sulfate Anhydrous	100 mg	**
Green Tea Extract ( <i>Camellia sinensis</i> )(leaf)(60% catechins, 30% EGCG, 6% caffeine)	93.75 mg	**
Methylsulfonylmethane (MSM)	50 mg	**
Calcium D-Glucarate Tetrahydrate	50 mg	**

\*\* Daily Value not established.  
**Other Ingredients:** Capsule (hypromellose and water), stearic acid, magnesium stearate, silica, medium-chain triglyceride oil, and microcrystalline cellulose.

**DIRECTIONS:** Take two capsules daily, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. 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, yeast, soy, animal and dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically-modified organisms (GMOs), artificial colors, artificial sweeteners, and artificial preservatives.

 Quatrefolic® S1. Quatrefolic® is a registered trademark of Gnosis S.p.A. Produced under US Patent 7,947,662.



## References

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Additional references available upon request

Due to the evolving nature of interactions and contraindications, it is advised that practitioners consult a current database for new information.

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.

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