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DopaBoost™ is designed to support the body's natural production of dopamine, one of the body's primary catecholamine neurotransmitters produced by the adrenal glands.\* Dopamine is essential for the normal functioning of the central nervous system that is associated with attention, learning, working memory, modulation of behavior and cognition, voluntary movement, balance, sleep, dreaming, and mood regulation.<sup>1</sup> It is frequently referred to as part of the brain's "punishment and reward" system, as it can help promote a positive mental outlook, motivation, and balanced moods.\*

Dopamine exerts many of its effects in the central nervous system, but cannot cross the blood-brain barrier (BBB). Therefore, the way to raise dopamine levels in the brain is to provide precursor nutrients and other supportive compounds that do cross into the brain, where dopamine can then be synthesized. Dopamine is synthesized in the brain from the amino acid tyrosine, which is hydroxylated to L-DOPA (dopamine's immediate precursor) and is then decarboxylated to dopamine. Regulating dopamine is vital to our physical and mental health.

The primary ingredient in DopaBoost™ is *Mucuna pruriens*, a botanical that naturally contains L-DOPA, the metabolic precursor to dopamine which can cross the blood-brain barrier. Additional ingredients include EGCg (epigallocatechin-3-gallate), acetyl-L-tyrosine, quercetin and vitamin B6, all selected for their synergistic roles in the production and regulation of dopamine.\*

Supporting the body's natural dopamine production is necessary for the clinical support of neurodegenerative disorders related to dopaminergic activity, such as Parkinson's disease. Parkinson's disease (PD) affects nearly one million people in America and more than 10 million people worldwide, a figure expected to rise due to aging populations.<sup>2,3</sup> Although the neuropathology of PD appears to be multifactorial (environmental and genetic), the main characteristic feature of PD is the progressive destruction of dopamine-producing neurons in the substantia nigra region of the brain stem; once 70% has been destroyed, symptoms develop. The loss of dopamine synthesis affects the balance between dopamine and acetylcholine in the brain causing disturbed signaling to the muscles, often leading to muscle rigidity, tremor, gait, and balance disturbances.<sup>4</sup> Non-motor symptoms common in PD caused by autonomic dysfunction include constipation, orthostatic hypotension, sleep disorders, fatigue, pain, mood disturbances, memory complaints, excessive sleepiness, and more.<sup>4</sup>

## Key Ingredients

**Mucuna (*Mucuna pruriens*)** is a tropical plant in the legume species also known as "velvet bean" which is a natural source of L-DOPA, the metabolic precursor to dopamine. The Mucuna material in DopaBoost™ is standardized to contain a potent 60% L-DOPA. The neuroprotective and restorative effect of *Mucuna pruriens* is due to its role in preserving and increasing mitochondrial complex 1 activity without affecting monoamine oxidase activity.<sup>5,6</sup> The Mucuna plant also provides antioxidant activity, and has been shown in both animal and human studies to be more effective than synthetic L-DOPA without causing increased dyskinesia.<sup>5</sup> In a Parkinsonian animal model, *M. pruriens* was effective in increasing dopamine levels and its metabolites within the substantia nigra.<sup>7</sup> Mucuna has also been shown to help non-motor complications including inflammation, neuropathy, constipation, and general debility.<sup>7</sup>

**EGCg (epigallocatechin-3-gallate)** is the main antioxidant and polyphenol in green tea with neuroprotective properties that can increase the availability of dopaminergic neurons.<sup>8</sup> The green tea extract in DopaBoost™ is standardized to contain 98% polyphenols and 45% EGCg. Research shows that EGCg neutralizes free radicals and reactive oxygen species (ROS), helping prevent their neurotoxic effects, and also prevents neuronal loss.<sup>8</sup> EGCg elevates the activity of superoxide dismutase and catalase, two major oxygen-radical metabolizing enzymes. EGCg can also chelate unbound iron and copper ions to be eliminated from the body, which, in excess, may play a role in the development of neurodegenerative diseases as they increase ROS and hydrogen peroxide leading to neuronal cell death.<sup>8,9</sup> Due to EGCg's ability to regulate calcium ion influx, activate AMP kinase (AMPK), and enhance mitochondrial activity, it increases neuronal activity and offers neuroprotection in PD and other neurological conditions.<sup>5,8</sup> EGCg also acts as a catecholamine-O-methyltransferase (COMT) inhibitor, the enzyme responsible for breaking down and converting dopamine to methyl dopa, which cannot convert back to dopamine once broken down.<sup>8</sup>

## DopaBoost™ may support\*:

- Neurological health
- Coordination and balance
- Involuntary movements
- Restful sleep
- Balanced moods; positive mental outlook
- Healthy cognitive function; memory and learning
- Motivation; goal attainment
- Fine motor control

**Quercetin** is a powerful flavonoid present in many fruits and vegetables including onions, citrus fruits, red apples, grapes, dark berries, red wine, and green tea known for its antioxidant and anti-inflammatory properties.<sup>10</sup> Quercetin is also a strong protector of neurons against free radical damage as this phytochemical enhances mitochondrial biosynthesis and can cross the BBB helping neutralize peroxy radicals and ROS, as well as decrease inflammatory cytokines within the brain.<sup>8,10,11</sup> Quercetin naturally inhibits COMT and MAO (monoamine oxidase) enzymes, both involved in the metabolism of and breakdown of dopamine.<sup>12</sup> Quercetin works synergistically with *Mucuna pruriens* and EGCG to help preserve dopamine levels by helping L-DOPA stay in the system longer for a sustained release of dopamine in the brain.\*

**N-Acetyl-L-Tyrosine** is the acetylated derivative of L-tyrosine, the amino acid from which dopamine is synthesized. Acetylation helps increase the stability and solubility of tyrosine, increasing its effectiveness and bioavailability and making it the superior choice for raising tyrosine levels in the body.

**Pyridoxal-5-Phosphate (P5P)** is vitamin B6 in its metabolically active form. P5P is an essential cofactor for the enzyme that converts L-DOPA to dopamine, as well as converting 5-HTP to serotonin, the “feel good” neurotransmitter that helps with a positive mental outlook. Low vitamin B6 has been shown to play a detrimental role in cognitive decline, where supplementation was shown to improve cognitive function and mood.<sup>13</sup> Other roles for P5P include healthy metabolism of proteins, proper hormone signaling, and synthesis of heme, the portion of hemoglobin that carries oxygen in the blood.<sup>13</sup> For these reasons, adequate B6 levels may help maintain steady energy levels.\*

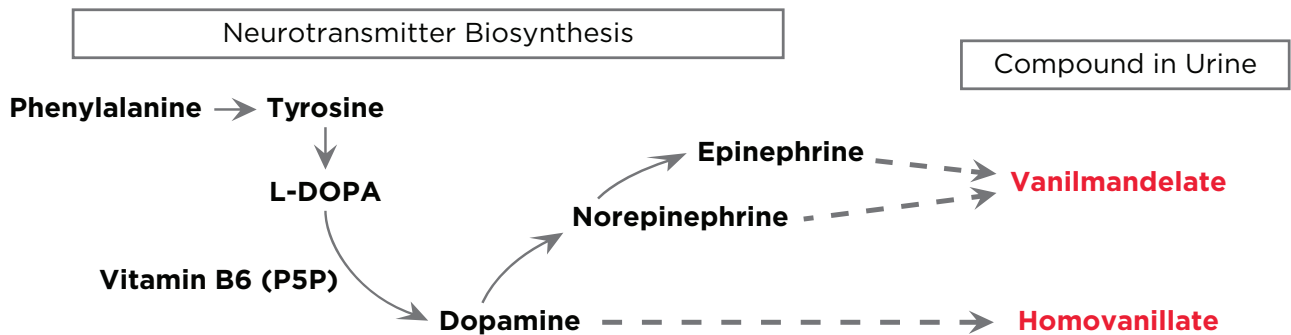
## Supplement Facts

Serving Size 2 capsules  
Servings Per Container 30

Amount Per Serving	% Daily Value
Vitamin B-6 (as Pyridoxal-5-Phosphate)	5 mg 294%
N-Acetyl-L-Tyrosine	750 mg *
Mucuna Extract ( <i>Mucuna pruriens</i> )(seed) [standardized to contain 60% L-Dopa (3, 4 Dihydroxy-L-Phenylalanine)]	425 mg *
Green Tea Extract ( <i>Camellia sinensis</i> )(leaves) [standardized to contain 98% polyphenols and 45% EGCG]	100 mg *
Quercetin	100 mg *

\*Daily Value not established.

**Other Ingredients:** Cellulose (capsule), vegetable stearate.



### Recommended Use:

- Take two capsules per day, or as directed by your health care practitioner.

### DopaBoost™ should not be used with:

- MAOIs (nonspecific monoamine-oxidase inhibitors)
- Antipsychotic drugs, such as phenothiazines, butyrophenones and reserpine
- Antihypertensive drugs such as guanethidine and methyldopa (may cause increased hypotension)

For a list of references cited in this document, please visit:

<http://www.designsforhealth.com/techsheet-references/dopaboost-references.pdf>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities. Individual monitoring, including liver function tests, may be appropriate.

\*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.

To contact Designs for Health, please call us at (860) 623-6314, or visit us on the web at [www.designsforhealth.com](http://www.designsforhealth.com).