

## ANTIOXIDANT SUPPORT FOR HEALTHY AGING AND A HEALTHY INFLAMMATORY RESPONSE

Ultra Cell Biotect contains unique phytochemicals from extracts of organic green tea, pepper **(Capsicum annuum)**, organic turmeric, black turmeric **(Kaempferia parviflora)**, and organic grape seed to complement a healthful diet and protect cellular health. Normal cellular metabolism produces byproducts that can age or damage our cells, such as free radicals. Dietary antioxidant phytochemicals complement our natural antioxidant defenses by neutralizing free radicals and affecting cell signaling pathways that promote cardiovascular health, the inflammatory response, proper cell growth, and cellular stability.

The green tea and turmeric extracts in Ultra Cell Biotect were selectively chosen because they have been formulated with complementary ingredients that enhance absorption. *Capsicum annuum* is included because of its potential synergy with green tea, grape seed for its rich concentration of proanthocyanidins, and *Kaempferia parviflora* for its potential to activate the SIRT1 pathway, which is thought to promote healthy aging.

## **GREEN TEA**

The leaves of the tea plant, *Camellia sinensis*, are rich in certain catechins, flavonoid antioxidants that are very rare in other plant foods. Green tea is especially rich in tea catechins, epigallocatechin 3-gallate (EGCG) in particular. Epidemiologic studies have found that drinking brewed green tea regularly is associated with cardiovascular health and longevity.<sup>1-3</sup> In vitro



studies (studies in cultured cells) suggest that green tea catechins work through a variety of mechanisms, including protecting healthy cells against oxidative damage and affecting signaling pathways that promote normal DNA repair and inflammatory status.<sup>10</sup>

Greenselect<sup>®</sup> Phytosome<sup>®</sup> is a caffeine-free extract that uses soyflower lecithin to enhance absorption.<sup>11, 12</sup> A human study comparing lecithin-complexed green tea to "free" green tea found that the peak EGCG concentration in plasma, which occurred 2 hours after ingestion, was 2-fold higher for lecithin-complexed green tea.<sup>11</sup> A 24-week human study found that Greenselect<sup>®</sup> Phytosome<sup>®</sup> has antioxidant effects, and that it could help maintain healthy fasting glucose, triglycerides, and blood pressure.<sup>12</sup>

# ULTRA CELL BIOTECT Product Features

- Greenselect<sup>®</sup> Phytosome<sup>®</sup>, a high absorption, caffeine-free extract of organic green tea
- Capsicum annuum (pepper) powder
- Curcumin C3 Complex®: high absorption turmeric extract
- Sirtmax<sup>®</sup>: Kaempferia parviflora (black turmeric) extract
- Organic European grape seed
  extract
- Vegan
- Free of gluten and dairy
- No genetically modified ingredients



### **CAPSICUM ANNUUM**

**Capsicum annuum** is a species that includes many different varieties of peppers. In vitro, phytochemicals called vanilloids, which are present in **Capsicum annuum** have shown synergistic effects with green tea, magnifying the protective effects of green tea on cells. <sup>13</sup>

### **CURCUMIN & ORGANIC TURMERIC ROOT**

Curcumin refers collectively to the major bioactive components (curcuminoids) of the turmeric root (*Curcuma longa*), a yellow-colored culinary spice: curcumin, bisdemethoxycurcumin, and demethoxycurcumin. In vitro, curcumin has been shown to inhibit NF-kB, a transcription factor and regulator of the inflammatory response.<sup>14-16</sup>

Although it is helpful to season foods with turmeric regularly, the benefits of dietary turmeric may be limited by curcumin's poor bioavailability. Curcumin C3 Complex<sup>®</sup> is an extensively studied turmeric extract, which contains 95 percent curcuminoids and uses piperine (Bioperine<sup>®</sup>), a black pepper extract, to enhance absorption.<sup>17</sup> For additional turmericderived phytochemicals to complement the curcuminoidconcentrated extract, whole turmeric is also included.

Research on curcumin complexed with piperine in humans suggests it has antioxidant effects, protects the

cardiovascular system, supports joint health, and promotes a healthy inflammatory response.<sup>18-21</sup>

### KAEMPFERIA PARVIFLORA

Sirtmax<sup>®</sup> is an extract of **Kaempferia parviflora** (also known as black turmeric), a root related to turmeric and ginger. In vitro, Kaempferia parviflora phytochemicals activate the SIRT1 pathway and protect against oxidative damage.<sup>22,23</sup> Sirtmax<sup>®</sup> helps activate the SIRT1 enzyme to support healthy aging. Also, results of a seven-week placebo-controlled human study suggested that Sirtmax<sup>®</sup> helps to keep blood glucose in the healthy range and may also help to limit visceral fat accumulation.<sup>24</sup>

### **ORGANIC GRAPE SEED EXTRACT**

Grapes are a common food, but grapes with seeds are less common; grape polyphenols are concentrated in the seeds, skins, stems, and leaves, rather than in the flesh. When compared directly, the seeds have the greatest antioxidant capacity, followed by the leaf, skin, and then flesh. The major classes of antioxidant phytochemicals in grape seeds and skin are proanthocyanadins, and grape seeds are especially rich in these phytochemicals compared to other foods.<sup>25, 26</sup> In a four-month human trial, Enovita<sup>®</sup> grape seed extract was shown to have antioxidant effects and promote cardiovascular health.<sup>27</sup>

# ULTRA CELL BIOTECT Supplement Facts

### **Supplement Facts**

Serving Size: 2 capsules Servings Per Container: 60

Amoun	t Per Serving
Curcumin C3 Complex® Turmeric Rhizome Extract (min. 95% Curcuminoids)	500 mg*
GreenSelect® Phytosome (Soy Phosphatidylcholine Complexed with an Extract of Organic Green Tea Leaves)	300 mg*
Enovita® Organic European Grape Seed Extract Organic turmeric root/rhizome powder	200 mg* 200 mg*
Sirtmax® Black Turmeric Rhizome Extract (Kaempferia parviflora)	100 mg*
Cayenne pepper fruit (Capsicum annuum) BioPerine® Black Pepper Fruit Extract	12 mg* 5 mg*
*Daily value not established	

# **Other Ingredients:** hypromellose, vegetable stearic acid, silica. Non-GMO

Suggested Use: Take two capsules daily.

# Does not contain: eggs, dairy, peanuts, tree nuts, fish, shellfish, wheat, gluten

#### Contains: soy

Not produced in an allergen-free or gluten-free facility. Produced in a facility with an allergen control program in place designed to properly handle, store and use materials in production to eliminate the risk of cross-contamination, in accordance with Good Manufacturing Practices (GMPs).

#### \*\*These supplements have not been evaluated by the Food and Drug Administration.

Products listed are not intended to diagnose, treat, cure or prevent disease.

For more detailed information about this supplement, visit http://www.drfuhrman.com/shop/180

1.	Wang ZM, Zhou B, Wang	YS, et al. <b>Black an</b>	d green tea consumption and	d the risk of coronary artery	y disease: a meta-analysis. The American	journal of clinical nutrition 2011, 93:506-515

2. Arab L, Liu W, Elashoff D. Green and black tea consumption and risk of stroke: a meta-analysis. Stroke 2009, 40:1786-1792.

- 4. Sun CL, Yuan JM, Koh WP, Yu MC. Green tea, black tea and breast cancer risk: a meta-analysis of epidemiological studies. Carcinogenesis 2006, 27:1310-1315.
- 5. Ogunleye AA, Xue F, Michels KB. Green tea consumption and breast cancer risk or recurrence: a meta-analysis. Breast Cancer Res Treat 2010, 119:477-484.
- 6. Khan N, Adhami VM, Mukhtar H. Review: green tea polyphenols in chemoprevention of prostate cancer: preclinical and clinical studies. Nutr Cancer 2009, 61:836-841.
- 7. Zheng J, Yang B, Huang T, et al. Green Tea and Black Tea Consumption and Prostate Cancer Risk: An Exploratory Meta-Analysis of Observational Studies. Nutr Cancer 2011:1-10.
- 8. Kuriyama S, Shimazu T, Ohmori K, et al. Green tea consumption and mortality due to cardiovascular disease, cancer, and all causes in Japan: the Ohsaki study. JAMA 2006, 296:1255-1265.
- 9. Iso H, Date C, Wakai K, et al. The relationship between green tea and total caffeine intake and risk for self-reported type 2 diabetes among Japanese adults. Ann Intern Med 2006, 144:554-562.
- 10.Singh BN, Shankar S, Srivastava RK. Green tea catechin, epigallocatechin-3-gallate (EGCG): mechanisms, perspectives and clinical applications. Biochem Pharmacol 2011, 82:1807-1821.
- 11. Pietta P, Simonetti P, Gardana C, et al. Relationship between rate and extent of catechin absorption and plasma antioxidant status. Biochem Mol Biol Int 1998, 46:895-903.
- 12. Belcaro G, Ledda A, Hu S, et al. Greenselect phytosome for borderline metabolic syndrome. Evid Based Complement Alternat Med 2013, 2013:869061.
- 13. Morre DM, Morre DJ. Catechin-vanilloid synergies with potential clinical applications in cancer. Rejuvenation Res 2006, 9:45-55
- 14. Singh S, Aggarwal BB. Activation of transcription factor NF-kappa B is suppressed by curcumin (diferuloyImethane) [corrected]. J Biol Chem 1995, 270:24995-25000.
- 15. Sandur SK, Pandey MK, Sung B, et al. Curcumin, demethoxycurcumin, bisdemethoxycurcumin and turmerones differentially regulate anti-inflammatory and anti-proliferative responses through a ROS-independent mechanism. Carcinogenesis 2007, 28:1765-1773.
- 16. Aggarwal BB. Nuclear factor-kappaB: the enemy within. Cancer Cell 2004, 6:203-208.
- 17. Shoba G, Joy D, Joseph T, et al. Influence of piperine on the pharmacokinetics of curcumin in animals and human volunteers. Planta Med 1998, 64:353-356.
- 18. Mirzabeigi P, Mohammadpour AH, Salarifar M, et al. The Effect of Curcumin on some of Traditional and Non-traditional Cardiovascular Risk Factors: A Pilot Randomized, Double-blind, Placebo-controlled Trial. Iran J Pharm Res 2015, 14:479-486. 19. Panahi Y, Alishiri GH, Parvin S, Sahebkar A. Mitigation of Systemic Oxidative Stress by Curcuminoids in Osteoarthritis: Results of a Randomized Controlled Trial. J Diet Suppl 2016, 13:209-20
- 20. Panahi Y, Hosseini MS, Khalili N, et al. Antioxidant and anti-inflammatory effects of curcuminoid-piperine combination in subjects with metabolic syndrome: A randomized controlled trial and an updated meta-analysis. Clin Nutr 2015, 34:1101-1108. 21. Panahi Y. Rahimnia AR. Sharafi M, et al. Curcuminoid Treatment for Knee Osteoarthritis: A Randomized Double-Blind Placebo-Controlled Trial. Phytother Res 2014.
- 22. Horigome S, Yoshida I, Ito S, et al. Inhibitory effects of Kaempferia parviflora extract on monocyte adhesion and cellular reactive oxygen species production in human umbilical vein endothelial cells. Eur J Nutr 2015.

<sup>3.</sup> Tang N, Wu Y, Zhou B, et al. Green tea, black tea consumption and risk of lung cancer: a meta-analysis. Lung Cancer 2009, 65:274-283.