

DNA PRIME

Unparalleled Cellular Protection & Telomere Support*



Telomeres, DNA, and mitochondria are essential components of our cells and play crucial roles in cellular function and overall health. Telomeres are the protective caps at the ends of our chromosomes that prevent the loss of genetic information during cell division. Over time, telomeres naturally shorten, which can lead to cellular aging and increased risk of age-related diseases. DNA is the genetic material that provides the instructions for cellular function, while mitochondria are the powerhouses of the cell, responsible for producing energy. Damage to DNA and mitochondria can lead to cellular dysfunction and increased risk of diseases such as cancer, neurodegenerative diseases, and cardiovascular disease.

Overall, maintaining the health of our telomeres, DNA, and mitochondria is essential for healthy aging and longevity. As we age, these cellular components naturally decline, making it important to support them through various means, including diet, exercise, and targeted nutritional supplementation. The use of supplements containing **ac-11® Cat's Claw Aqueous Extract**, **Activated BroccoRaphanin®**, **Sulforaphane Glucosinolate**, **Buckwheat Peptides**, **2-HOBA**, and **MitoPrime®** (L-ergothioneine) serve as a promising way to support the health of our telomeres, DNA, and mitochondria, and promote healthy aging overall.



DEMOGRAPHIC & CLINICAL APPLICATIONS

MEN & WOMEN	PATIENTS REQUIRING
	<ul style="list-style-type: none"> • Healthy Aging & Longevity • Healthy Cardiometabolic Function • Healthy Neurological Function • Mitochondrial Support



BENEFITS

Supports Telomere Length & Telomerase activity

Supports DNA Repair & Cellular Renewal

Promotes Mitochondrial Function

Aids in the Mitigation of Oxidative Stress

DIRECTIONS:

Take 2 capsules daily or as directed by your healthcare practitioner.

SUPPLEMENT FACTS

Serving Size: 2 Capsules | Servings Per Container: 30

	Amount Per Serving	%DV
ac-11® Cat's Claw Aqueous Extract (Uncaria tomentosa)(bark)(standardized to 8% carboxy alkyl esters, CAEs)	700 mg	*
Activated BroccoRaphanin® (Broccoli concentrate from seed and myrosinase enzyme)	300 mg	*
Sulforaphane Glucosinolate (as Glucoraphanin)	30 mg	*
Buckwheat Peptides 20:1	200 mg	*
2-HOBA (Hobamine®)	100 mg	*
L-Ergothioneine (as MitoPrime®)	10 mg	*

* Daily Value Not Established

Other Ingredients: Microcrystalline Cellulose, Magnesium Stearate (Vegetable), Silica, Vegetable Capsule (Hypromellose)

ac-11® is a Registered Trademark of Optigenex, Inc. and protected by US Patent Nos.: 10,098,922, 7,579,023, 6,964,784 and 7,595,064.

BroccoRaphanin®
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hobamine

MITOPRIME®



MULTI-FACETED AGING SUPPORT



ac-11[®], also known as *Uncaria tomentosa* extract or Cat's claw extract, has been studied for its potential to support joint health and since become a staple in clinical practice for that application. As of late, it has been found to increase telomerase activity, which is the enzyme responsible for maintaining the length of telomeres. ac-11[®] may also help to retain telomere length and promote telomere health by providing antioxidant support, supporting DNA repair mechanisms, and enhancing immune system function. In addition, some studies suggest that ac-11[®] may have epigenetic effects, meaning it can modify the expression of genes involved in telomere regulation and cellular aging.² Overall, ac-11[®] has the potential to support overall telomere health and promote healthy aging.

BroccoRaphanin[®]

Activated Broccoraphanin[®] and sulforaphane glucosinolate are two bioactive compounds found in broccoli sprouts that have been historically studied for their potential to support detoxification, however, more recently it has been looked into relative to telomere health and promoting healthy aging. Activated BroccoRaphanin[®] is a precursor to sulforaphane, which is a potent antioxidant compound that has been shown to support telomere health and telomerase activity. In addition, sulforaphane has been shown to support DNA repair mechanisms and promote mitochondrial support.^{3,4} Overall, Activated BroccoRaphanin[®] and sulforaphane glucosinolate have the potential to support overall cellular health and promote healthy aging.

MITOCHONDRIAL SPECIFIC SUPPORT

Buckwheat peptides are short chains of amino acids derived from buckwheat protein that have been shown to support telomere health and telomerase activity. Buckwheat Peptide 20:1 means that the extract has been concentrated 20 times, resulting in a more potent form of buckwheat peptides. This concentration is achieved through a process of extraction and purification, which allows for a higher concentration of the active compounds to be obtained. Buckwheat peptides may also help to prevent telomere shortening and promote DNA repair mechanisms. In addition, buckwheat peptides have been shown to support mitochondrial health and promote cellular energy production. Overall, buckwheat peptides have the potential to support overall cellular health and promote healthy aging.⁵

hobamine[®]

Hobamine[®], aka 2-HOBA, or 2-hydroxybenzylamine, is a synthetic molecule that has been studied for its potential to support telomere health and promote healthy aging. 2-HOBA is a potent antioxidant that has been shown to protect against oxidative stress and promote DNA repair mechanisms. In addition, 2-HOBA has been shown to support mitochondrial health and promote cellular energy production.^{6,7,8,9} Overall, 2-HOBA has the potential to support overall cellular health and promote healthy aging.

MITOPRIME[®]

MitoPrime[®], L-ergothioneine is a naturally occurring antioxidant compound that has been studied for its potential to support telomere health and promote healthy aging.¹⁰ L-ergothioneine has been shown to protect against oxidative stress, which are two key factors that contribute to telomere shortening and cellular aging.¹¹ In addition, L-ergothioneine has been shown to support mitochondrial health and promote cellular energy production. Overall, L-ergothioneine has the potential to support overall cellular health and promote healthy aging.



REFERENCES

1. Akesson, Christina et al. "An extract of *Uncaria tomentosa* inhibiting cell division and NF-kappa B activity without inducing cell death." *International immunopharmacology* 3,13-14 (2003): 1889-900. doi:10.1016/j.intimp.2003.07.001
2. Sheng, Y et al. "Enhanced DNA repair, immune function and reduced toxicity of C-MED-100, a novel aqueous extract from *Uncaria tomentosa*." *Journal of ethnopharmacology* 69,2 (2000): 115-26. doi:10.1016/s0378-8741(99)00070-7
3. Vanduchova, Alena et al. "Isothiocyanate from Broccoli, Sulforaphane, and Its Properties." *Journal of medicinal food* 22,2 (2019): 121-126. doi:10.1089/jmf.2018.0024
4. Houghton, Christine A. "Sulforaphane: Its "Coming of Age" as a Clinically Relevant Nutraceutical in the Prevention and Treatment of Chronic Disease." *Oxidative medicine and cellular longevity* 2019 2716870. 14 Oct. 2019, doi:10.1155/2019/2716870
5. Zhou, X., Wen, L., Li, Z. et al. Advance on the benefits of bioactive peptides from buckwheat. *Phytochem Rev* 14, 381-388 (2015). <https://doi.org/10.1007/s11101-014-9390-0>
6. Davies SS, May-Zhang LS, Boutaud O, Amarnath V, Kirabo A, Harrison DG. Isolevuglandins as mediators of disease and the development of dicarbonyl scavengers as pharmaceutical interventions. *Pharmacol Ther.* 2020;205:107418. doi:10.1016/j.pharmthera.2019.107418
7. Davies SS, Zhang LS. Reactive Carbonyl Species Scavengers—Novel Therapeutic Approaches for Chronic Diseases. *Curr Pharmacol Rep.* 2017;3(2):51-67. doi:10.1007/s40495-017-0081-6
8. Mayorov V, Uchakin P, Amarnath V, et al. Targeting of reactive isolevuglandins in mitochondrial dysfunction and inflammation. *Redox Biol.* 2019;26:101300. doi:10.1016/j.redox.2019.101300
9. McMaster WG, Kirabo A, Madhur MS, Harrison DG. Inflammation, immunity, and hypertensive end-organ damage. *Circ Res.* 2015;116(6):1022-1033. doi:10.1161/CIRCRESAHA.116.303697
10. Samuel P, Tsapekos M, de Pedro N, Liu AG, Casey Lippmeier J, Chen S. Ergothioneine Mitigates Telomere Shortening under Oxidative Stress Conditions. *J Diet Suppl.* 2022;19(2):212-225. doi: 10.1080/19390211.2020.1854919. Epub 2020 Dec 7. PMID: 33287595.
11. Fu TT, Shen L. Ergothioneine as a Natural Antioxidant Against Oxidative Stress-Related Diseases. *Front Pharmacol.* 2022 Mar 18;13:850813. doi: 10.3389/fphar.2022.850813. PMID: 35370675; PMCID: PMC8971627.