

I.V. OGGI [*Italian translation: TODAY*] oral drops

Background

Within the last decade, the World Health Organization (WHO) has added aging as an international classification of diseases, and, by extension, promoted greater interest in anti-aging science (see ICD-11).¹ There is vast attention on NAD⁺ (nicotinamide adenine dinucleotide) biosynthesis in anti-aging research and the effects of its decrease associated with aging in attenuation of effectiveness of vulnerable organs and tissues.⁷ **Orangecello** is a robust proprietary blend of NMN (Nicotinamide Mononucleotide), Choline, Inositol, L-Carnitine, Vitamin C, Folic Acid, B12 methylcobalamin, B6 pyridoxine, CB4211 (mitochondrial derived peptide analog of MOTS-c), and chromium picolinate precisely blended within a natural orange flavor and organic sugar cane. This oral drop supplement blend is an overall health aid with anti-aging and weight-loss properties designed to harmonize metabolic functions in the body or the group of life-sustaining chemical reactions that fuel cellular processes. The following section will detail the formulary blend.

Research

Nicotinamide Mononucleotide or simply **NMN**, is a natural precursor of NAD⁺ (nicotinamide adenine dinucleotide), a coenzyme present in all living cells.⁴ NAD⁺ levels may perhaps be a critical connection to better understanding aging given its utility in nutrient sensing systems operation, e.g., the mammalian target of rapamycin (mTOR) involved in cell growth and protein synthesis, activated protein kinase (AMPK) connected to detecting low energy conditions, and sirtuins or a protein family necessary for moderating DNA expression and aging – all of which need NAD⁺ to function.^{4,5}

Choline is associated with the B-vitamin family and plays a role in neurological development and function, in fact due to the human brain's vast evolutionary growth its nutritional needs have expanded, which include an adequate choline supply.⁸⁻¹¹ **Inositol** is a natural compound that plays a role in multiple biological pathways, associated with hormone signaling and associated with amelioration of metabolic and reproductive conditions, specifically male infertility disorders.¹² **L-Carnitine** is an amino acid associated with multiple dimensions of physical performance, e.g., strength, endurance, and exercise capacity coupled with delayed fatigue.¹³ The endurance enhancement, fatigue recovery, and accelerated injury recovery properties are associated with abilities to increase blood flow and oxygen supply to muscle tissue combined with robust antioxidant actions to decrease markers of cell damage.¹⁴⁻¹⁶ **Vitamin C** is strongly associated with antioxidant properties; however, recent research highlights its key role in hormonal synthesis involved in epigenetic processes.¹⁷ Vitamin C facilitates electron donation, in other words its antioxidant function and free radical scavenger properties, also as an enzymatic cofactor plus linked to gene transcription, collagen & hormone synthesis.^{17,18} **Folic Acid** on the other hand can accept electrons, demonstrating robust metabolic activity and protective factors against certain

cancers and ischemic events.¹⁹ Researchers put forth that folic acid plays a role in the elimination of divalent cations from the body, in other words neutralizing potentially harmful reactions and serving as a protective factor.²⁰

B12 methylcobalamin is widely associated with metabolic efficacy with its active metabolites playing important roles in methylation reactions that involve DNA, certain hormones, and neurotransmitter synthesis.^{21,22} Other notable actions include nitric oxide production and related vasodilator actions, including cell protective properties that improve immune and vascular health.²³⁻²⁸ **B6 pyridoxine** is described as one of the most important cellular molecules of living organisms.²⁹ It serves multiple critical roles in general cellular metabolism, a cofactor in hundreds of biochemical cellular reactions, amino acid, fatty acid, and neurotransmitter biosynthesis, positive effects on photosynthesis, and robust antioxidant properties.³⁰⁻³⁹ **CB4211** (mitochondrial derived peptide analog of MOTS-c) is a possible treatment for metabolic diseases via a mechanism of action to sensitize the insulin receptor.⁴⁰ Lee, Kim, & Cohen (2016) state that mitochondria are the foremost metabolic organelle, and mitochondrial-derived peptides (MDPs) like MOTS-c have metabolic properties, playing a role in diabetes, exercise performance, obesity, and longevity.⁴¹ Particularly, actions are promoted via a significant role in enhancing glucose metabolism.⁴¹ CB4211 as a novel peptide analog of MOTS-c and in its roles in modulating fatty acid metabolism, glucose homeostasis, and insulin sensitivity may have efficacy in sustaining decrease in blood glucose levels with additional curbing effects of onset of age-related conditions such as obesity and type 2 diabetes.⁴⁰ Lastly, **chromium picolinate** as an adjunct anti-obesity supplement, supports healthy body composition and weight by playing a role in food intake regulation, particularly reduction in cravings for carbohydrates and sweets.^{42,43}

Conclusion

Provided the recognition by the WHO in adding aging as a classification of illness, new opportunities in anti-aging research have emerged, specifically in therapies that may delay, manage, or reverse hallmarks of age-related disease such as certain cancers, cardiovascular and metabolic diseases, and neurodegenerative conditions.^{2,3} Two compounds headline this formulary, NAD⁺ and CB4211 with a strong supporting cast of other anti-aging ingredients. Research suggests that NAD⁺ plays a pivotal role in multiple aging and viability processes, e.g., modulates cellular repair and metabolism.⁶ CB4211 as a novel peptide analog of MOTS-c (mitochondria are the foremost metabolic organelle, and mitochondrial-derived peptides (MDPs) like MOTS-c have metabolic properties, playing a role in diabetes, exercise performance, obesity, and longevity) has actions in modulating fatty acid metabolism, glucose homeostasis, and insulin sensitivity, limiting effects of onset of age-related conditions such as obesity and type 2 diabetes.

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Summary

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