SCIENCE IN FOOD DEVELOPMENT

Development of a supplement for muscle building using no artificial additives



Élelmiszertudományi és Technológiai Intézet

János Orosz, Krisztina Takács, Zsuzsa Mednyánszky

Department of Nutrition, Institute of Food Science and Technology Hungarian University of Agriculture and Life Sciences, Budapest, Hungary

INTRODUCTION

The dietary supplement marketplace is constantly evolving and growing. Sports nutrition products are now part of the everyday diet not only for athletes, but for those who want to get and/or stay in shape. After research on the dietary supplement market it is clear that sustainability needs improvement from environmental and customers' perspectives as well. Differentiated product variations needed to follow the changing customer habits.

OBJECTIVE

Developing a science based all in one supplement formula for muscle building using no artificial additives.

METHODOLOGY

We did academic research on ergogenic aids which are used in muscle building and power lifting. Also did market research on the dietary supplement field focusing mainly on the European market.

RESULTS

We have found that there are only a few potential nutritional compounds whose effects are scientifically proven. We have developed a unique formula which contains creatine, beta-alanine, HMB, arginine, carnitine and taurine. All of these substances are found mainly in meats in our diet so this formula can be a considerable supplement as the animal product consumption decreases and people are more towards to plant based diets.

ANALYSIS

We only have customer reports on the effect of the innovative supplement product, but during development and research we became aware of an emerging and rising problem. Some of the ingredients can not only improve muscle strength and mass but can also decrease the rate of sarcopenia, studies shows, which is an emerging problem in the expanding aging population.

Supplement facts

Adag mérete: 2/3 adagolókanál (17g) Adagok száma a dobozban: 28

Mennyiség per adag		%NRV
B3 Vitamin (mint Niacin)	16 mg	100%
B6 Vitamin (mint Piridoxin)	1,4 mg	100%
B12 Vitamin (mint Kobalamin)	2,5 mcg	100%
Kalcium (mint Ca-HMB)	225 mg	53%
Magnézium (mint Mg-biszglicinát)	100 mg	**
Nátrium (mint kősó)	40 mg	**
Creapure® Kreatin-monohidrát	5000 mg	**
Béta-alanin	2000 mg	**
Са-НМВ	1500 mg	**
L-Arginin HCI	1500 mg	**
L-Karnitin L-Tartarát	1500 mg	**
Taurin	1500 mg	**
** Ajánlott napi bevitel (NRV) nincs meghatározva	•	



CONCLUSION

As the food supplement industry is lacking in products which can help prevent muscle loss, we compiled a research plan to improve the existing product and step into another direction. The development of the product is currently in progress which will be followed by a randomized double-blind, placebo-controlled clinical trial.

Acknowledgements:

We are grateful for the financial support of the Doctoral School of Food Science.

Related literature

Kreider, R.B. Effects of creatine supplementation on performance and training adaptations. Mol Cell Biochem 244, 89-94 (2003). doi: 10.1023/A:1022465203458

Artioli GG, Gualano B, Smith A, Stout J, Lancha AH Jr. Role of beta-alanine supplementation on muscle carnosine and exercise performance. Med Sci Sports Exerc. 2010 Jun;42(6):1162-73. doi: 10.1249/MSS.0b013e3181c74e38

Oktaviana, J., Zanker, J., Vogrin, S. et al. The Effect of β-Hydroxy-β-Methylbutyrate (HMB) on Sarcopenia and Functional Frailty in Older Persons: A Systematic Review. J Nutr Health Aging 23, 145-150 (2019). doi: 10.1007/s12603-018-1153-y