

**Specialist in  
CARNITINES  
as pharmaceutical  
and nutraceutical  
ingredients**



# NUTRACEUTICAL

## Ingredients

Biosint nutraceutical carnitines are known for their superior quality and efficacy as demonstrated by the available scientific literature.

Nutraceutical applications for Biosint carnitines include newborn formula, sport management, weight reduction programs, general wellbeing, fitness and physical maintenance, mental performance, anti-stress solutions and more.

Biosint carnitine is Halal, Kosher, and ISO 9001 certified.

***\*The literature reported in the table is just an example of the scientific documentation available on carnitines.***

# LIST OF NUTRACEUTICAL INGREDIENTS

CARNITINE TYPE	FEATURES & FORMULATIONS	APPLICATIONS	MAIN BENEFITS
<b>L-Carnitine Base</b>	100% active ingredient. Most suitable for formulation requiring high concentration of the active ingredient and for liquid formulations due to its great capacity to absorb water.	Infant Formula Sports & Energy Drinks	+ Enriches soy-based and milk infant formula + Useful for general well-being + Boosts athletic performances and accelerates Recovery
<b>L-Carnitine Hydrochloride</b>	82% L-Carnitine Base. It is characterized by a higher density. It is soluble, thus, can be used for effervescent formulations and tablets in general. It is not recommended for jelly capsules.	Sports & Energy Drinks	+ Useful for general well-being + Boosts athletic performances + Accelerates Recovery
<b>L-Carnitine Tartrate</b>	68.7% L-Carnitine Base. Given its solubility is indicated for liquid and effervescent formulations.	Sports & Energy Drinks Sports tablets	+ Useful for general well-being + Boosts athletic performances + Accelerates Recovery
<b>L-Carnitine Fumarate</b>	58.5% L-Carnitine Base. It is the most stable of all L-carnitine salts and the most palatable. Recommended for effervescent formulations, tablets and capsules.	Sports & Energy Drinks Sports & Weight loss tablets & Capsules	+ Useful for general well-being + Boosts athletic performances + Accelerates Recovery + Co-factor in weight reduction program
<b>Ultrafine L-Carnitine Fumarate</b>	L-Carnitine Fumarate (patented) 58.0% 2% carnitine, 41.5% + 1% fumaric acid. Mesh size: Passes 150 mesh conditioned with fumed food grade silica.	Sports & Energy Drinks Sports & Weight loss tablets & Capsules	+ Finer particle size + Increased bioavailability + Decreased hygroscopicity + Conveniently formulated with oil-based ingredient
<b>Acetyl L-Carnitine Hydrochloride/ Taurinate</b>	Carnitine derivative, very soluble in water and suitable for liquid and solid formulations.	Memory, Learning & Concentration Beverages, Tablets, Capsules	+ Memory enhancement & reduction of mental decline + Learning and concentration enhancement + Mood improvement (anti-depressant)
<b>Propionyl L-Carnitine Hydrochloride</b>	Carnitine derivative, very soluble in water and suitable for liquid and solid formulations.	Blood circulations Sports drinks	+ Blood circulation peripheral improvement + Physical performances tolerance increase + Favours better results in longer walking distance

# LIST OF NUTRACEUTICAL INGREDIENTS | REFERENCES

CARNITINE TYPE	REFERENCES*
<b>L-Carnitine Base</b>	<b>Ulinsky et al 2023.pdf</b> <a href="https://www.mdpi.com/2673-8236/3/2/16">https://www.mdpi.com/2673-8236/3/2/16</a> 
<b>L-Carnitine Hydrochloride</b>	<b>Petrillo et al 2021 PW study.pdf</b> <a href="https://www.mdpi.com/1422-0067/22/19/10781">https://www.mdpi.com/1422-0067/22/19/10781</a> 
<b>L-Carnitine Tartrate</b>	<b>Nutrients 13 - 04359.pdf</b> <a href="https://www.mdpi.com/2072-6643/13/12/4359">https://www.mdpi.com/2072-6643/13/12/4359</a> 
<b>L-Carnitine Fumarate</b>	<b>Szymański_15579883211036790.pdf</b> <a href="https://journals.sagepub.com/doi/full/10.1177/15579883211036790">https://journals.sagepub.com/doi/full/10.1177/15579883211036790</a> 
<b>Ultrafine L-Carnitine Fumarate</b>	<b>Szymański_15579883211036790.pdf</b> <a href="https://journals.sagepub.com/doi/full/10.1177/15579883211036790">https://journals.sagepub.com/doi/full/10.1177/15579883211036790</a> 
<b>Acetyl L-Carnitine Hydrochloride/Taurinate</b>	<b>Mota et al 2021.pdf</b> <a href="https://pubmed.ncbi.nlm.nih.gov/34164711/">https://pubmed.ncbi.nlm.nih.gov/34164711/</a> 
<b>Propionyl L-Carnitine Hydrochloride</b>	<b>Di Emidio et al 2020.pdf</b> <a href="https://www.mdpi.com/2076-3921/9/9/867">https://www.mdpi.com/2076-3921/9/9/867</a> 



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