



## NOW's Testing Results of Astaxanthin Products August 2023

Recently NOW decided to test the category of Astaxanthin products after a consumer contacted us and suggested problems in labeling and potencies. The consumer purchased a 24 mg product on Amazon and believed the product was mislabeled based on the oil color and measured weight inside the softgel. In addition, 24 mg of Astaxanthin is a very high potency for this product and prices advertised seemed too good to be true. This is the 15<sup>th</sup> round of testing by NOW overall and started in 2017 when we first tested suspicious supplement products.

Astaxanthin is a reddish carotenoid antioxidant naturally derived from algae such as *Haematococcus pluvialis*. It can also be made synthetically. The food industry uses astaxanthin as a food colorant in salmon feed to give the fish a richer color. Astaxanthin as a supplement has become very popular, and it is growing each year. Potencies sold have increased over the years so that we found three brands are sold today on Amazon at 24 mg. Astaxanthin is typically sold by producers in 1%-10% levels. This means that a 10% oil will require 100mg Astaxanthin algae in a softgel to get 10 mg label claim of Astaxanthin. Most Astaxanthin is sold in a liquid, oil-soluble form, which is packaged in softgels. Astaxanthin powders are more costly per gram, but still available.

We purchased two bottles of each product from 22 brands (including NOW) on both Amazon and Walmart.com. It was obvious even before testing that many brands were mislabeling potency claims on the front label panel vs. the side panel. Two tests were performed to assess the quality of each brand: HPTLC and HPLC. HPTLC (high-performance thin-layer chromatography), was used for identification of astaxanthin as coming from *Haematococcus pluvialis* algae. HPLC (high-performance liquid chromatography) was used to quantify the amount of astaxanthin in tested products. NOW in-house labs tested astaxanthin by both techniques.

Externally, NOW sent one unopened bottle of each brand to Alkemist Labs to provide an independent report on the same products. HPTLC was performed by both NOW's in-house lab and Alkemist Labs, an industry-leading botanical identification contract laboratory for identification of Astaxanthin.

Below are highlights of this testing group, as well as detailed assay results:

- The products chosen were purchased from both Amazon and Walmart.com at the end of April 2023. These brands were picked because these are less known and sold almost entirely on these platforms. We have avoided testing health food store brands or practitioner brands as being less suspect.
- NOW has tested some of the same brands previously in other categories and found many problems. aSquared brand has failed seven different product testing and has the worst record for potencies tested among all brands. This includes CoQ10 being tested four different times from 2017-2022 and always testing below 50% of label claim. We Like Vitamins is another repeat offender by failing six different tests and each of this brand's potencies were less than 33% of label claim! We Like Vitamins did pass two earlier tests, but also showed zero potency of both Bromelain and Phosphatidyl Serine in previous tests.
- About one-third of brands tested here are new, first-time in our testing program. TerraVita has a drastic label error by claiming 450mg "Astaxanthin Algae" per dry capsule. aSquared brand mislabels the supplements facts panel by stating "Astaxanthin 10 mg...yielding 5% potency". This is very deceptive since the name of the product and Amazon's description both clearly state "Max Strength 10mg". We Like Vitamins does the same labeling trick but is more deceptive by adding "10% potency yield" in a small, barely legible font. Later we found We Like Vitamins side panel to list the "10% potency yield" in normal font and another listing showed no "10% potency yield" on the label of their same product.
- 14 out of 22 samples failed potency testing and 13 out of the 14 failures contained less than 1 mg of astaxanthin. Each of the 24 mg products failed very badly and the only gummy tested contained less than 1% of astaxanthin.



<b>NOW Testing Astaxanthin Products August 2023</b>					
<b>Astaxanthin Brand Tested 2023</b>	<b>Size</b>	<b>Lot #</b>	<b>Label Potency</b>	<b>NOW HPLC Results</b>	<b>Alkemist ID only Results</b>
Amazing Nutrition (NJ)	120 Sgels	AV-0122199	12 mg	0.6 mg	Pass
aSquared (misabeled 5%)	120 Sgels	221012	10 mg	0.6 mg	Pass
Best Naturals (NJ)	60 Sgels	052231	12 mg	0.4 mg	Fail
Bulk Supplements	180 Sgels	SG3304011	12 mg	13 mg	Pass
Cheeky Nutrition (UK)	180 Sgels	28829	12 mg	0.8 mg	Pass
Clear Formulas (FL)	180 Sgels	220310	10 mg	0.7 mg	Pass
Deal Supplement (CA)	90 Sgels	A302NB1	12 mg	11 mg	Pass
Doublewood (PA)	60 Sgels	2301009	12 mg	14 mg	Pass
Health Thru Nutrition (NY)	120 Sgels	1151 2230	12 mg	15 mg	Pass
Horbaach (NV)	120 Sgels	109331	12 mg	13 mg	Pass
Lilicare (+ 500mg Resveratrol)	60 Gummi	731078	24 mg	0 mg	Fail
Micro Ingredients (CA)	90 Sgels	M04A0323	12 mg	15 mg	Pass
NatuVitz (misabeled 5%) (FL)	120 Sgels	220406	10 mg	0.6 mg	Pass
NatureBell (CA)	120 Sgels	A301NB2	12 mg	11 mg	Pass
Neviss + Ashwagandha (CA)	2/75 Sgels	220620	24 mg	0.3 mg	Pass
Nootamin (+ Ashwagandha)	60 Vcaps	MI/ASTC/0223	15 mg	0 mg	Fail
Nootrilabs (+ Formula) (FL)	90 Vcaps	MI/APGC/0423	15 mg	0 mg	Fail
<b>NOW</b>	<b>60 Vgels</b>	<b>3289649</b>	<b>12 mg</b>	<b>13 mg</b>	<b>Pass</b>
Osasuna Liposomal (KY)	60 Sgels	UDT-089-8927	24 mg	0 mg	Fail
Research Labs (UT)	120 Sgels	220820	12 mg	4 mg	Pass
TerraVita (DE) (misabeled)	100 Caps	78-D86F2DE7	450 mg	0.1 mg	Fail
We Like Vits (misabeled 10%)	180 Sgels	41199A	10mg	0.3 mg	Pass

NOW does this testing to publicly report which brands are labeling accurately. We welcome brands to communicate with NOW about these findings and openly share this information with all customers, industry trade groups and FDA.

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