

PEScience Gets Exotic: Reds & Blues For More Micronutrients

written by Mike Roberto | November 12, 2021

With the *massive* proliferation of *greens powders* by the industry today, we should all be asking ourselves: what is the real nutritional value of these products? Can just a couple tablespoons of dried fruits or vegetables *really* have much of a positive effect on our health? What differentiates these products from one other? What advantages do they offer over just consuming ordinary fruits and vegetables that you buy at the grocery store?



Boost your Greens with PEScience Exotic Reds & Blues

These are questions worth asking in any case, but especially given the price point of these supplements: dried whole-food powders can often cost upwards of \$50 a bag, so you want to be sure you're getting big benefits for your dollar.

As a service to consumers who are concerned about *value*, PEScience asked all of these questions – and then answered them.

Exotic Reds & Blues: Powerful Anthocyanins & Carotenoids

With **PEScience Exotic Reds and Blues**, you get a powerful “red” counterpart to pair with their unique *PEScience Greens & Superfoods* that were released in 2020. We dig deep into the *anthocyanins* and *carotenoids* in this interesting Reds and Blues formula below, but first, check PricePLOW's coupon-based prices and subscribe to our PEScience news alerts:

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We'll do an individual ingredient breakdown for Exotic Reds & Blues, but because the supplement contains *so many* powerful ingredients, it will be more efficient for us to first talk about the properties of the two *fundamental classes* of bioactive compounds each have in common:

• **Anthocyanins: A Powerful Weapon against Big Diseases**

Many of our favorite fruits and vegetables – blueberries, raspberries, pomegranates, beets – are rich in *anthocyanins*, a class of *polyphenol* molecules[1] that imbue plants with *red and blue* (hence the product name) hues. Anthocyanins are *crucial* to the health and function of the plants where they occur, aiding in propagation and defense against herbivores,[1] but it turns out they're *great* for human health as well.



The PEScience Reds & Blues Label (zoom-in of ingredients is below)

At the outset, it should be noted that *anthocyanins* are *insanely* powerful antioxidants,[2] helping to prevent our DNA from being damaged by oxidative stress.[2] But these days in the nutritional supplement industry, antioxidant supplements seem like they're a *dime a dozen* – so with that out of the way, let's talk about some of the more *specific* and *unique* benefits that anthocyanins have on human health.

First of all, anthocyanins have *amazing* antimicrobial activity: anthocyanins inhibit the growth of bacteria on so many different levels that it really is as if they were *designed* to do it. Anthocyanins attack microbes directly, by breaking down cell walls, interfering with their mitochondrial function, and deactivating enzymes that microbes rely on to survive,[2] but they also attack microbes *indirectly*, by destroying the substrates that microbes need for food.[2]

So it's no surprise that anthocyanin-rich extracts of cranberry, elderberry, blueberry, and bilberry inhibited the growth of *Helicobacter pylori* by a whopping 90%.[2] That's a big deal, because *H. pylori* has been linked to several diseases of the gastrointestinal tract, including *gastritis*, *cancer*, and *ulcers*.[3]

Anthocyanins are also profoundly *anti-inflammatory* – they actually suppress the expression of *genes* that the body uses to create inflammatory molecules.[2] Among the inflammatory molecules downregulated by anthocyanins are the *prostaglandins*, the same target of world-famous anti-inflammatory drug

aspirin. One study, comparing anthocyanin extracts to *aspirin*, found that anthocyanins actually did *better* than aspirin at preventing systemic inflammation[4], which, if you think about it, says truly amazing things about the power of anthocyanins.



Don't have a shaker? Mix it with one of these things

When it comes to *diabetes*, anthocyanins continue to shine: *adipocyte* inflammation, a type of cellular dysfunction that's linked to metabolic syndrome and obesity, significantly improves by administering anthocyanins.[5] That's possibly because anthocyanins increase the expression of a hormone called *adiponectin*, which is responsible for increasing whole-body insulin sensitivity and promoting glucose uptake in muscle tissue.[2] Since adiponectin levels typically decrease in cases of obesity,[2] administering anthocyanins could potentially help interrupt the vicious cycle of insulin resistance and hyperglycemia.

To be honest, all of this is just *scratching the surface* of anthocyanins' *incredible* range of benefits for human health – but I think we can all agree that for *most* people living in Western societies, inflammation, diabetes, and gastrointestinal disease are *extremely* common concerns. Since *anthocyanins* have shown clear benefits for these conditions, *anthocyanin-rich* foods and supplements are a worthy addition to *almost* anybody's diet.

- **Carotenoids: Vitamin A precursors, Vision protection, UV absorption**

Whereas anthocyanins give plants colors from the *red/blue* end of the color

spectrum, *carotenoids* give them colors from the *red/yellow* end. As an example, the vegetable from which carotenoids got their name – the carrot – is bright orange. However, carotenoids are not exclusive to plants: they can be found at high concentrations in butter and egg yolks.[6] You find carotenoids in these animal fats because while anthocyanins are *water-soluble*, carotenoids are *fat-soluble*,[6] so if you really want to *maximize* your absorption of carotenoids from Exotic Reds & Blues or any other source, you should *always* consume them with a generous serving of *healthy* dietary fat.



One thing that carotenoids have in *common* with anthocyanins is their *antioxidant* activity.[7] Probably because of their *anti-inflammatory* effect,[6] having a high carotenoid intake has been linked to healthy body composition[6] and a lower incidence of cardiovascular disease.[6] So in many ways, carotenoids have effects on the body similar to those of anthocyanins.

For *carotenoid-specific* effects on the human body, we will turn to the discussion of *lutein* and *beta-carotene*, two carotenoids that are highly concentrated in *acerola powder*, which is one of the main ingredients in Reds & Blues from PEScience.

Beta-carotene is a *vitamin A* precursor,[8] meaning that the body will *convert* beta-carotene in a *rate-limited fashion* into the *active* form of vitamin A,

which is *retinol*. It's *crucial* to get enough vitamin A because a deficiency in this vitamin can cause a *wide* range of health problems, from immune dysfunction to metaplasia.[8] Carotenoid-rich diets have been linked *repeatedly* to a lower risk of macular degeneration[9] and cataracts,[10] two common diseases of the eye. Low vitamin A status is also recognized as a risk factor for heart disease.[11]

Moreover, *high* intakes of beta-carotene and other carotenoids can actually help protect human skin from damage after exposure to ultraviolet light.[12]

"But wait," one might ask, "What are the chances I'm not getting enough vitamin A? Do I really *need* to supplement?" As it turns out, the chances you're not getting enough A are quite likely: when the CDC conducted their 2005-2016 National Health and Nutrition Examination (NHANES) survey, they found that about 45% of the American public *doesn't* get enough vitamin A from their diets.[13]

The risk of vitamin A overdose from carotenoid intake is *low*, and carotenoids are recognized to be "generally nontoxic."[14] However, out of an abundance of caution, we at PricePlow warn people taking *any* vitamin A supplement to consider their *overall* vitamin A intake, and to be sure it does not exceed the recommended daily limit.

When it comes to *lutein*, one of only *two* carotenoids capable of crossing the brain-blood barrier, we see some *extremely* interesting effects on human vision and cognition. Usually we try to paraphrase research for the sake of brevity, but this excerpt was *so interesting* that we had to include it as a direct quote from a 2013 article published in *Advances in Nutrition*: [14]

"For example, because carotenoids absorb light, they can also influence the optical characteristics of the human eye. Lutein and zeaxanthin concentrate in the inner layers of the macular region of the eye (there, they are referred to as macular pigment). Macular pigment selectively absorbs the lower third of the visible spectrum (400–500 nm, peak absorbance = 460 nm). By forming an internal yellow filter that screens cones, a number of optical improvements occur. For example, by filtering scattered short-wave light, glare disability and discomfort are lessened... Light energy is inversely related to wavelength. Hence, by screening the energetic shorter wavelengths of light, actinic damage to the outer retina is reduced, whereas photostress recovery, chromatic contrast, and visual range are increased." [14]

This protective, filtering effect of lutein on the brain's ocular system is so *powerful* that it is believed to *improve cognition*, especially in older people.[15]

Ingredients

In one 5.5 gram scoop of *Exotic Reds & Blues* from PEScience, you get the following:



	Amount Per Serving	%DV
myo-inositol	2,000 mg	*
Reds & Blues Blend	3,000 mg	*
Freeze-Dried Strawberry Powder, Blueberry Juice Powder, Freeze Dried Maqui Berry Powder, MicroDried* Cranberry Powder, Pomegranate Juice Powder, Jabuticaba Juice Powder, MicroDried* Beet Root Powder, Freeze-Dried Dragon Fruit Powder, MicroDried* Aronia Fruit Powder, Freeze-Dried Açai Powder		
Concentrated Antioxidant Blend	130 mg	*
Acerola Fruit Juice Powder, Pomegranate Fruit Extract, Blueberry Fruit Extract, Grape Seed Extract, Açai Fruit Extract, Turmeric Root Extract		

*Daily Value (DV) Not Established

Other Ingredients: Monk Fruit Extract, Calcium Silicate, Silicon Dioxide

10 calories (< 3g net carbohydrates)

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A close-up of the PEScience Reds & Blues Ingredients

- **Reds & Blues blend – 3,000 mg**

See the section above to discuss the benefits of the blend. This blend contains the following:

Freeze-dried strawberry powder, blueberry juice powder, freeze-dried maqui berry powder, MicroDried cranberry powder, freeze-dried pomegranate juice powder, jabuticaba juice powder, MicroDried beet root powder, freeze-dried dragon fruit powder, MicroDried aronia fruit powder, and freeze-dried acai powder.

- **Concentrated Antioxidant Blend – 130 mg**

See the section above to discuss the benefits of the blend. This blend contains the following:

Acerola fruit juice powder, pomegranate fruit extract, blueberry fruit extract, grape seed extract, acai fruit extract, and turmeric root extract.

- **Inositol – 2,000 mg**

Inositol is a unique carbohydrate that's found primarily in the brain. Although once thought to be an "essential" carbohydrate, meaning a carbohydrate the body cannot synthesize and must obtain in a complete form from food, inositol has since been shown to be synthesized in the kidneys and liver. In the brain, inositol helps to both regulate neurotransmitters and maintain the integrity of cell membranes.[16,17] Research shows that poor mental performance is sometimes caused by low levels of inositol in the brain,[18] and that supplementation of inositol can improve cognitive function by increasing the production of dopamine and serotonin.[17]

Flavors Available

In case PEScience ends up putting any flavored versions out, here are the variations PricePLOW has seen:

Stacking



With KSM-66 Ashwagandha and Nutrition21's Chromax Chromium Picolinate, the PEScience TruMulti Series is a multivitamin with diet support in mind

The great thing about Exotic Reds & Blues is that it was designed to be stacked with some other *phenomenal* products from PEScience, such as their *Greens & Superfoods* powder, which is more *antioxidant, performance, and micronutrient* focused. If you want to stack the benefits of reds, blues *and* greens with a more traditional vitamins and minerals approach to supplementation, you could stack *all three* of them with the *PEScience TruMulti multivitamin* – when you’re dealing with a company as innovative and prolific as PEScience, the possibilities are truly endless.

Want to think about your stacking options? Head over to our PEScience brand news page and take a look at their product catalog: PEScience News, Reviews, & Prices at PricePlow

Greens are good, but don’t forget to get your Reds

There’s a saying in nutrition these days that you should try to “*eat the rainbow*” – that is, to consume a wide enough variety of food that every color of the rainbow is represented in your diet. The very good reason for this is that *color* indicates the specific antioxidant and phytochemical profile of any given plant, and for optimal health, you want to make sure that you’re consuming the widest possible range of beneficial compounds.



So, *regardless* of whether you’re taking a greens supplement, or *which* one you’re taking, Exotic Reds & Blues from PEScience is an *excellent* addition to your diet and your supplement routine. This is a unique product that focuses on a section of the rainbow that isn’t typically represented in the supplement market: the red, blue, and purple part, where your anthocyanins and carotenoids will reside.

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