

Arms Race Nutrition CLARITY Powder: Good-Mood Energy Nootropic

written by Mike Roberto | October 25, 2022

Wants, desires, commitments, *distractions* – our lives are filled with endless demands, as our day-to-day oscillates between tasks to do and persistent interruptions. In a fast-paced and *highly-virtual* environment, there's a premium value on the ability to *stay focused* on important tasks and *remove distractions* so that we can *stay happy and calm*.

Arms Race Nutrition (ARN) has been around for a few years now, smashing every obstacle in their path. The first time we covered the brand led by uber-popular fitness influencer *Julian Smith* and industry pioneer and professional bodybuilder *Doug Miller*, we wrote about the original *Arms Race Clarity* capsule formula. The dynamic duo, backed by an all-star team, has turned ARN into *far* more than an “influencer brand”.



It was time to reach more “Arms Dealers” with a nootropic that best serves their following:

Arms Race Clarity Powder: An *energized* brain health nootropic

Arms Race Clarity originally began as a unique “wellness nootropic” that aimed to optimize *mental focus and well-being*. It's now shifting away from the “mental health” category a bit, moving towards an *energized nootropic and brain health formula*.

Clarity is still very much different from other nootropics. It tackles energy, cognition, brain health, yet still has incredible mood-boosting benefits. It pumps up the blood flow with *nooLVL*, but is no longer stimulant free – there’s a unique dual caffeine blend (yielding **137.5 milligrams of caffeine** per serving) that includes a *delayed* release of caffeine (37.5 milligrams) after the initial 100 milligrams of caffeine anhydrous, topping you off after the initial rush.

Clarity still has the mood-boosting adaptogenic nootropic *bacopa monnieri*, but now also has *Sabroxy* extract standardized for *oroxylin A*, which we think has *serious* potential in supplements like this. There’s also plenty of carnitine, choline, tyrosine, and caffeine-synergizing *enXtra*.

In this post, we’ll dive into the new Clarity Powder formula. Before we get to that, make sure you’re signed up for Arms Race Nutrition news and deal alerts so that you can stay up-to-date with what Smith and the team have going on.

Arms Race Nutrition Clarity – Deals and Price Drop Alerts

Get Price Alerts

Get Clarity Price Alerts Get Arms Race Nutrition alerts Get Nootropics price drops

Also get hot deal alerts

No spam, no scams.

Disclosure: PricePlow relies on pricing from stores with which we have a business relationship. We work hard to keep pricing current, but you may find a better offer.

Posts are sponsored in part by the retailers and/or brands listed on this page.

Arms Race Nutrition Clarity Powder Ingredients

In a single *1 scoop* (9.7 gram) serving of Clarity Powder from Arms Race Nutrition, you get the following:

- **nooLVL™ (Inositol Enhanced Bonded Arginine Silicate) – 1,600mg**

Table of Contents

◆

- Arms Race Clarity Powder: An energized brain health nootropic
- Arms Race Nutrition Clarity Powder Ingredients
 - nooLVL™ (Inositol Enhanced Bonded Arginine Silicate) – 1,600mg
 - NooLVL in context: arginine’s bioavailability problem

- How inositol-stabilized arginine silicate increases arginine bioavailability
- Nutrition21's ASI evolution: how Nitrosigine became nooLVL (NO helps the brain, too!)
- How nooLVL works: extra inositol
- Acetyl-L-Carnitine HCl – 1,000 mg
 - Carnitine: an ATP-boosting “super-supplement”
 - Acetyl-L-Carnitine (ALCAR) – the nootropic carnitine
- L-Tyrosine – 1,000 mg
 - Thyroid and cognition: is there a link?
- Alpha-GPC 50% – 600 mg
- Mucuna Pruriens Extract (Seed) (50% L-Dopa) – 500 mg
- enXtra (Alpinia galanga) (5:1 rhizomes) – 300 mg
- Bacopa monnieri Extract (50% bacopasides) – 300 mg
- Sabroxy Extract (Oroxylum indicum) (bark) (10% oroxylin A) – 100 mg
 - Oroxylum A: Support the memory and neurons
 - Not just found in Oroxylum Indicum!
- Total Caffeine Yield – 137.5 mg (from Caffeine Anhydrous – 100mg and ZumXR Delayed Release Caffeine – 50 mg)
 - 100 milligrams now, 37.5 later
 - Why caffeine in a nootropic?
- Huperzia serrata Extract (leaf and stem) (1% Huperzine A) – 20 mg
- Flavors Available
- Find Focus and Calm Energy with the New Clarity

First, let's get the *blood flowing* so that *everything* works better. **NooLVL** is an *inositol-stabilized arginine silicate* (ASI) complex developed and patented by Nutrition21.[1] It's designed to *boost nitric oxide* (NO) production, which can be a major boon for *brain health* and cognitive performance thanks to the resulting increased blood flow.

NooLVL in context: arginine's bioavailability problem

Nutrition21's ASI ingredients were designed to solve a specific problem in supplement science: although *arginine* is the most direct precursor to *nitric oxide* (NO) production, standard L-arginine is hampered by low oral

bioavailability.

For this reason, the supplement industry moved away from arginine and towards *citrulline*, which is a *precursor to arginine* and significantly more bioavailable. The problem with citrulline is that you need pretty big doses to get the most out of it: studies about citrulline's impact on arginine production indicate that returns don't start diminishing until you exceed *10 whole grams* of L-citrulline in a single dose.[2]

The idea behind Nutrition21's ASI ingredients (a category that includes not just *noolLVL*, but also *Nitrosigine*) is to circumvent some of these issues by creating a *more bioavailable form of arginine*. In theory, this can give you *better effects* with far less material.

How inositol-stabilized arginine silicate increases arginine bioavailability

	Amount Per Serving	% DV
Vitamin B6 (Pyridoxine HCl)	100 mg	5,982%
Vitamin B9 (Folate)	400 mcg	100%
Vitamin B12 (Methylcobalamin)	100 mcg	4,196%
noolLVL (Inositol-Enhanced Bonded Arginine Silicate)	1600 mg	**
Acetyl-L-Carnitine HCl	1000 mg	**
L-Tyrosine	1000 mg	**
Alpha-GPC 50%	600 mg	**
Mucuna pruriens Extract (seed) (50% L-dopa)	500 mg	**
EndoXtra™ (Alpinia galanga) (5:1 rhizomes)	300 mg	**
Bacopa monnieri Extract (50% bacosides)	300 mg	**
Sabroxy® Extract (Oroxylin indicum) (bark) (10% Oroxylin A)	100 mg	**
Caffeine Anhydrous	100 mg	**
Zum XR8 Delayed Release Caffeine	50 mg	**
Rhipido serrata Extract (leaf and stem) (1% Huperzine A)	20 mg	**

** Daily Value not established.

OTHER INGREDIENTS: Malic Acid, Natural and Artificial Flavors, Citric Acid, Silicon Dioxide, Sucralose, Acesulfame Potassium.

The oral bioavailability of pure arginine is low due to a phenomenon called the *first pass effect*, in which stomach enzymes degrade arginine so rapidly that it's almost completely gone by the time the bolus can transit to the intestine – and that's where would have actually been absorbed into your bloodstream.[3-5]

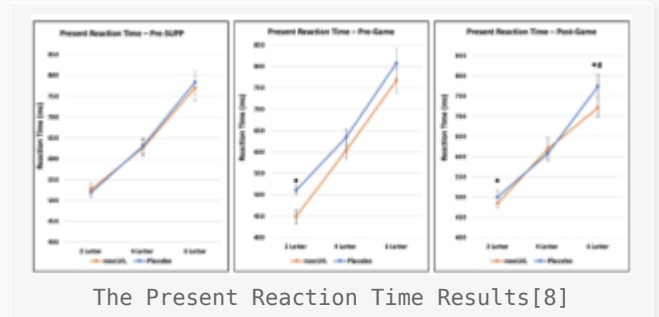
What Nutrition21 discovered was that you could *inhibit* this process by blending the arginine with silica and inositol, which buffer it in the stomach and *spare* it from being degraded by enzymes.[6,7] This chemical buffering enables the arginine to transit *through* your stomach largely intact, and ultimately be absorbed in far greater quantities through the intestinal wall than pure arginine would be.

Nutrition21's ASI evolution: how Nitrosigine became nooLVL (NO helps the brain, too!)

The first iteration of ASI from Nutrition21 was marketed as *Nitrosigine*, and remains incredibly popular with manufacturers as a *pre-workout* ingredient

thanks to its *ergogenic* NO-boosting properties. Nitrosigine really *does* give you one of the best pumps money can buy, in our opinion.

As more data and testimonials came out on Nitrosigine, though, it became clear that Nitrosigine's NO boosting wasn't *just* improving athletic performance: it was having some pretty serious *nootropic effects* as well.



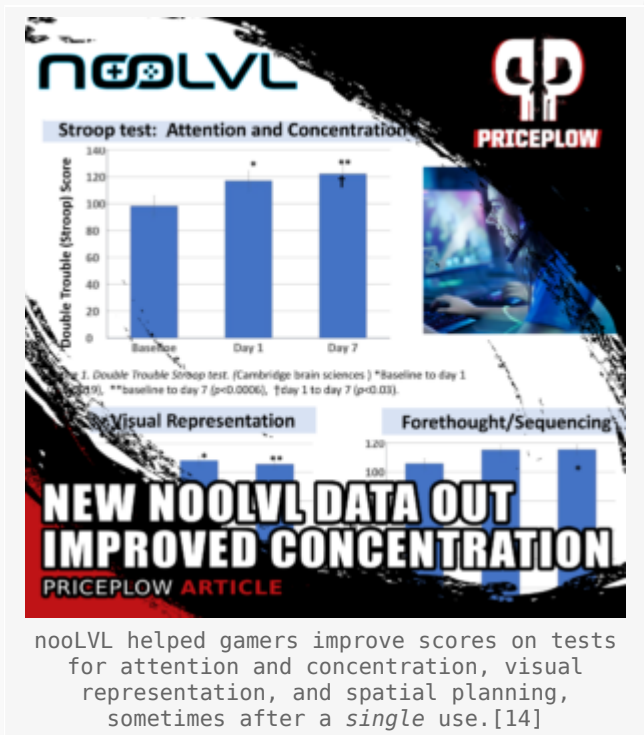
For example, some of the early studies on Nitrosigine found that it could improve *multitasking* and memory in healthy young subjects, as well as prevent the temporary cognitive decline that usually follows a heavy workout.[9-11]

This came as a bit of a surprise to an industry that had grown accustomed to thinking of NO-boosting ingredients as *ergogenic aids* and nothing more, but it makes sense if you think about it: boosting NO is all about *improving blood flow and tissue oxygenation*, and the *brain* is perhaps the hungriest for blood and oxygen of any organ in the body.

Nutrition21 had this epiphany pretty quickly, and that's how **noolVL** was born. NoolVL was designed as a *nootropic-optimized* form of Nitrosigine. The main difference is that it contains significantly more *inositol* than Nitrosigine does.

How nooLVL works: extra inositol

Some important studies have already been done on nooLVL's ability to boost cognitive performance: one found that it could significantly improve *reaction times* in experienced video gamers,[8,12,13] with another finding that nooLVL can improve *attention, concentration, visual representation, forethought, and sequencing*.[14] That's a *laundry list* of cognitive performance dimensions.



Although the research on Nitrosigine and cognition is pretty impressive as well, nooLVL seems to improve a much deeper and more specific list of cognitive abilities.

Again, the *extra inositol* seems like the reason why nooLVL is so good for cognition: inositol is a key component in the *phosphatidylinositol cycle*, a key regulator of neural activity. Boosting your inositol levels can help facilitate *communication between your neurons*, by helping your neurons *interpret* the signals they get from each other.[15,16]

One downstream effect of this is *optimized neurotransmitter production*,[17] which in turn is crucial for optimized brain function.

While nooLVL is known as a gaming ingredient, Clarity isn't marketed as a gaming supplement – although it'd definitely excel in that capacity. We love it for the blood flow improvements, which should help literally everything else that comes next:

- **Acetyl-L-Carnitine HCl – 1,000 mg**

The quaternary ammonium compound **carnitine** is responsible for moving *fatty acids* into your cells, where your *mitochondria* can take them up and burn them to produce *adenosine triphosphate* (ATP), your body's fundamental *energy currency*. [18]

ATP is *incredibly* important for optimal health – if your body were an automobile, ATP would be the *gasoline*. Without enough gas in the tank, the car won't start – and if the tank runs dry, the car *dies*.



The energy a car's engine creates in burning gas powers not just the locomotion of the car, but every secondary function of the car as well – the lights, the AC, the stereo. It's the same with ATP: *every single task your cells are asked to perform consumes ATP as fuel.*

Carnitine: an ATP-boosting “super-supplement”

Carnitine has been shown to upregulate certain *mitochondrial enzymes* that are crucial for ATP production.[19,20] Carnitine also has the ability to *stabilize mitochondria*, fortifying them against metabolic stress and even improving their function above baseline.[21]

As is the case with anything that directly affects ATP production, carnitine's effects turn out to be far-reaching and varied.

When it comes to *long-term cognition*, carnitine's ability to protect mitochondrial function can potentially help prevent the onset of severe neurodegenerative illness,[21] which seems to usually include *lack of cellular energy at the neuronal level* as a major factor.

Carnitine's ability to *improve metabolic function* also means that it can help potentiate *healthy weight loss*,[22,23] and improve *glucose tolerance* by increasing insulin sensitivity.[24]

Acetyl-L-Carnitine (ALCAR) – the nootropic carnitine

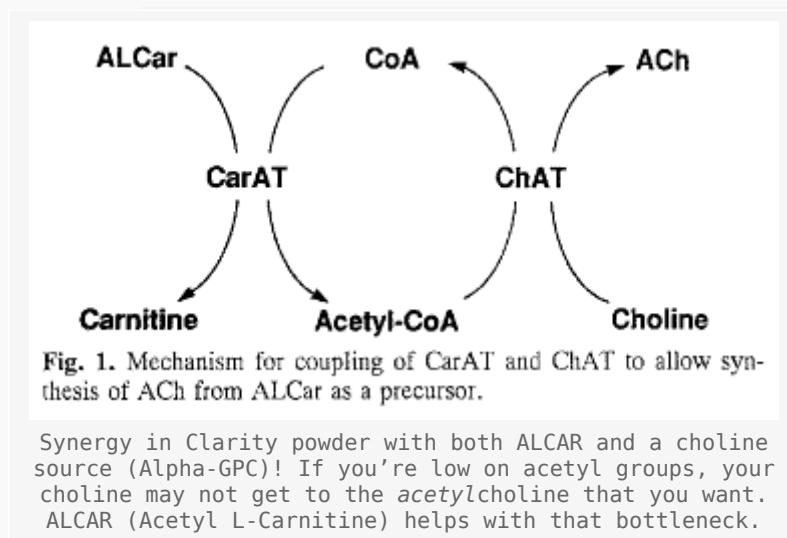
There are quite a few different *forms* of carnitine on the consumer supplement market today. Although any form of carnitine can give you the baseline carnitine effects we discussed above, each form seems to have some unique

properties of its own.

Acetyl-L-carnitine (ALCAR) is the *nootropic* carnitine – it has been used in the supplement industry for many years as a *neuroprotective*, *neurotrophic* and *anti-depressant* ingredient.[25]

The basic reason why ALCAR is so good for the central nervous system (CNS) is that of all known carnitine forms, ALCAR is best at crossing the *brain blood barrier* (BBB).[26] This is remarkable not just for a *carnitine* compound, but for supplement ingredients generally: the vast majority of the ingredients we write about exhibit little-to-no ability to cross the BBB.

In other words, ALCAR's magic seems to be rooted in its ability to *do what carnitine normally does*, except *in the brain*.



Animal studies have found that supplementation with ALCAR can significantly increase *synaptic plasticity* in brain tissue, and facilitate learning.[27]

In one study, *healthy mice* who took ALCAR for 25 days had *significantly higher levels of energy metabolites* in their brain tissue, indicating that their neurons had been consuming more energy than usual. Additionally, they had *much* higher levels of *monoamine neurotransmitters*, a category that includes famous heavy-hitters like *serotonin*, *dopamine*, and *adrenaline*. [28] Both of these facts seem to indicate an *improvement in global cognitive function* – the brain energy stuff being particularly important.

In one important *human study*, elderly men and women (that is, over the age of 65) who'd been diagnosed with *mild cognitive impairment* scored substantially better on a cognitive performance test after taking ALCAR, compared to a group that took a placebo instead.[29]

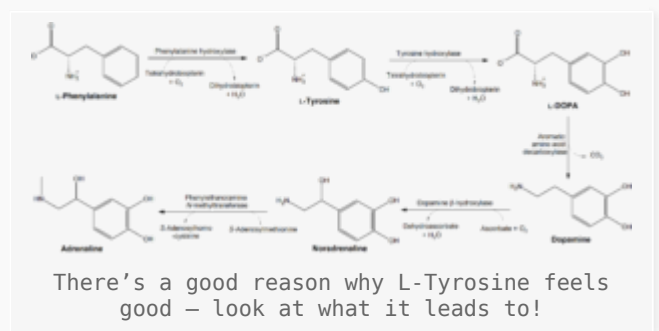
A major key to understanding ALCAR's impact on cognition is its apparent

ability to *reverse age-related decline in mitochondrial function*. [30] If you're not a kid anymore, you could probably stand to benefit, at least a little bit, from a good dose of ALCAR.

- **L-Tyrosine – 1,000 mg**

Tyrosine is famous as a *focus-boosting ingredient*. As a precursor to *catecholamine neurotransmitters* like *dopamine* and *adrenaline*, [31] both of which can substantially increase *motivation, focus,* and perceived mental and physical energy levels.

Supplying your body with tyrosine can help *sustain* neurotransmitter production in the face of cognitive or emotional stress, [32] helping you work hard for *longer* before you'll burn out.



In fact, tyrosine is particularly good at *boosting cognitive function during sleep deprivation*, [33,34] which is one of the most pernicious forms of stress faced by the average modern American. Tyrosine can reverse some of the cognitive impairment that's caused by not getting enough shuteye – one study even found that tyrosine is *better* at doing this than *caffeine*, which is most people's go-to wakefulness-promoting drug. [34]

Thyroid and cognition: is there a link?

The other thing we love about tyrosine is its ability to support *thyroid function* [35,36] by helping your body produce the hormones triiodothyronine (T3) and thyroxine (T4). [36]

This becomes particularly important for anyone who's *working out hard* or *restricting calories for weight loss*, as both of these behaviors have been shown to *downregulate* thyroid activity. [37,38]

There's *some* evidence that decreased thyroid function might be associated with cognitive impairment, although it's not conclusive. [39]

It's the *editorial opinion* of Team PricePlow that if you want to ensure optimal cognition, you'd better keep your *thyroid* functioning optimally. When

it comes to thyroid health, *hyperthyroidism* can be just as bad for cognition, if not worse, so giving your body *thyroid hormone precursors* like tyrosine is a better strategy than supplementing with the thyroid hormones directly.

- **Alpha-GPC 50% – 600 mg**

Alpha-Glycerylphosphorylcholine, which *fortunately* we abbreviate as **Alpha-GPC** or **A-GPC**, is a particularly bioavailable form of the essential B vitamin *choline*.



Choline plays an important role in *many* metabolic processes throughout the human body. Arguably the most important of these is in the *synthesis of the cellular phospholipid membranes* that enclose the contents of your cells, and which serve to keep nutrients in while keeping unwanted foreign bodies like metabolic waste and pathogens out.[40]

Choline is also an important precursor to *acetylcholine*, a neurotransmitter that assists *inter-neuronal* communication while helping drive the process of *long-term potentiation*, which is how your brain consolidates temporary *short-term memories* into more permanent *long-term* ones.[41]

Acetylcholine doesn't *just* affect mental skills: it can also affect *psychomotor abilities* like *balance* and *coordination*.[42,43]

Alpha-GPC is an industry-favorite form of choline, owing to its exceptional bioavailability and ability to cross the *brain-blood barrier*.[44] We'll have two ingredients below to synergize with this as well.

- **Mucuna Pruriens Extract (Seed) (50% L-Dopa) – 500 mg**

Mucuna pruriens is also known as *velvet bean*. It's native to the tropical climes of India, Asia, and the Caribbean islands.[45]



Mucuna Pruriens is popular for its dopamine and growth hormone boosting properties.
Courtesy Wikimedia

The leaves of this plant are *rich* in antioxidant compounds, and have been used as folk remedies for a *huge* range of ailments, thanks to its anti-inflammatory and pro-metabolic effects.[45] But what we're interested in for *nootropic purposes* is the *seed* of *Mucuna pruriens*.

As it turns out, the seeds contain *huge* amounts of **levodopa** (L-dopa),[46] an important *dopamine precursor*. L-dopa is capable of crossing the *blood-brain barrier* and entering your actual *brain tissue*,[46] where it can directly upregulate *dopamine* production.

Another important mechanism of action behind *Mucuna* is its ability to inhibit *acetylcholinesterase*, the enzyme responsible for breaking down *acetylcholine*,[47] a key neurotransmitter that we discussed earlier.

Stacking *acetylcholinesterase inhibitors* like *Mucuna* with *acetylcholine-boosting ingredients* like alpha-GPC is a time-tested strategy for nootropic effects, and we're *huge fans of it*. It's a synergistic *one-two punch*: you're getting *more* acetylcholine, but also extending its action.

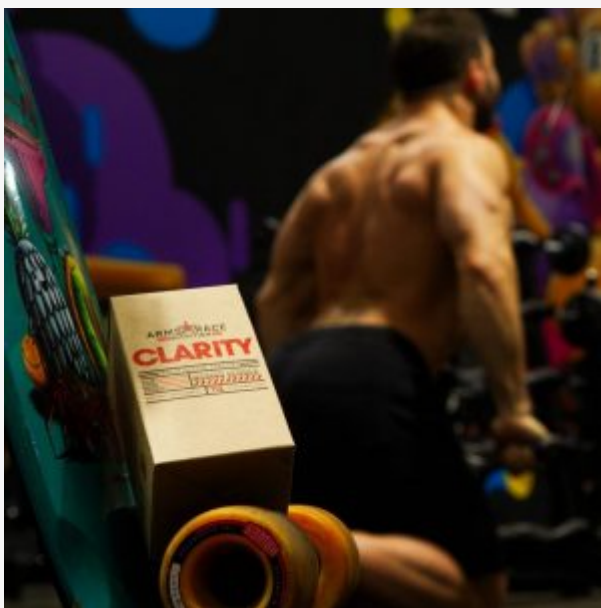
Because of its dopaminergic and acetylcholinergic activity, *Mucuna* has been studied fairly extensively as a neuroprotective agent that might be capable of

preventing age-related neurodegenerative illness.[47,48]

- **enXtra (*Alpinia galanga*) (5:1 rhizomes) – 300 mg**

Alpinia galanga hails from *Zingiberaceae*, a family of plants that includes nutraceutical heavy-hitters *ginger* and *turmeric*. *Alipina* is quite similar to its more famous cousins – it has powerful antioxidant, anti-inflammatory, and neuroprotective effects of its own.[49,50]

However, *Alpinia* has one particularly intriguing and unique characteristic: unlike ginger and turmeric, it has pronounced **psychoactive effects** that the enXtra extract was designed to take advantage of.



A tribute to the previous version of Clarity, which came in a bottle. Now we *drink* to our good mood!

In one 2017 double-blind, placebo-controlled study published by the *Journal of the American College of Nutrition*, human subjects were randomly assigned to one of *four* groups: placebo, enXtra, caffeine, and *enXtra plus caffeine in combination*.

They then had their cognitive function and alertness measured by a battery of tests at one, three, and five hours after treatment.

Unsurprisingly, all three groups that got an active treatment were more alert at the one-hour mark than they were before treatment. But at the *three-hour* mark, the *caffeine-only* group was actually *less* alert than baseline,[51] which probably won't surprise those of us familiar with the dreaded *caffeine withdrawals*.

The interesting thing, though, is that the groups that took enXtra did better than the other groups.

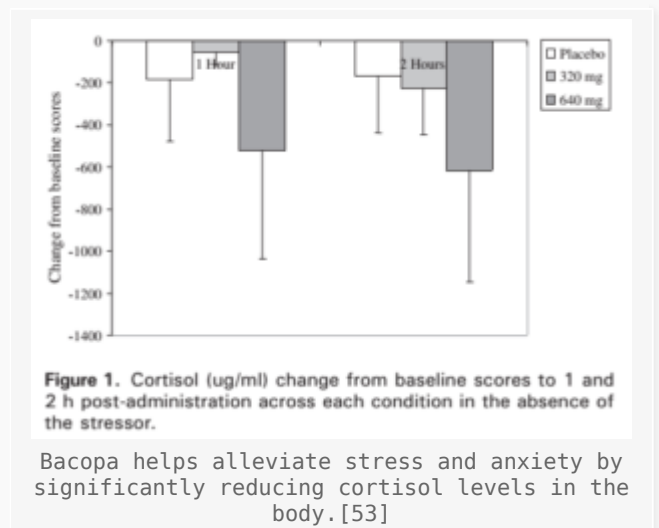
For instance, the group that received caffeine *together with enXtra* had about the same level of alertness as baseline.[51] And the group that took *only* enXtra had a *higher* level of alertness than baseline – across the *whole study period*. [51]

So it would seem that not only is enXtra a great *standalone* nootropic stimulant – it can also work *synergistically with caffeine* to prevent the worst effects of caffeine *withdrawal*. [51,52]

Aside from this and L-Dopa, Arms Race Nutrition will further boost those anti-crash capabilities by adding in a *delayed* release caffeine that we'll discuss later.

• ***Bacopa monnieri* Extract (50% bacopasides) – 300 mg**

Bacopa monnieri is a perennial herb with a long history of use in *Ayurvedic medicine*, in which it was used to improve mood, memory, and treat epileptic seizures. This is a mood-boosting adaptogenic nootropic that fits *perfectly* in Clarity.



Bacopa is rich in *bacosides*, [54] a type of *saponin* that is somewhat similar in structure and function to *beta-glucans* (famous neuroprotective compounds found in, e.g., lion's mane mushrooms).

A 2011 animal study found that when *mice* supplemented with *Bacopa*, they performed *much* better on tests of learning and memory. Close examination showed that the mice taking *Bacopa* had *more* and *longer* dendrites in their brains, compared to the control mice. [55]

The reason this matters is that the *dendrite* is sort of like an *antenna* for whatever neuron it's attached to – it helps *receive the neurotransmissive signals* that make up human cognition itself.[56] In fact, dendrites have been described in the research literature as *learning units*, which speaks directly to their unbelievable importance for cognitive health and function.[57]

A 2001 *human study* got similar results: subjects give 300 milligrams of *Bacopa* daily had significantly faster visual processing, learning, and *memory* than the placebo group.[58]

Part of *Bacopa's* magic seems to lie in its ability to defend the brain from *oxidative stress*. [59] More importantly for our purposes, it also seems to be capable of reducing *cortisol* levels, thus alleviating stress and improving mood.[53]

Ultimately, this is a feel-good, stress-reduction nootropic adaptogen that is a holdover from the original Clarity capsules. Note that ARN is using a highly standardized extract with 50% *bacopasides* – not cheap, but it will likely be felt!

- **Sabroxy Extract (*Oroxylum indicum*) (bark) (10% oroxylin A) – 100 mg**

Sabroxy is the least-known and most novel ingredient in Clarity Powder. It comes from *Oroxylum Indicum* (Indian trumpet tree), a medium-sized tree from tropical Asian regions,[60] which has many of the properties we love seeing in a new Ayurvedic herbal ingredient source:[60,61]

- Antioxidant[62]
- Anti-inflammatory[63]
- Antidiabetic[64]
- Anti-obesity[65]
- Anti-hyperlipidemic[66]
- Anti-arthritic[67]
- Antimicrobial[68]
- Anticarcinogenic[69]
- Cell protective[70]
- Kidney protective[60,71]
- Neuroprotective[72-78]

The above list includes *in vitro* and animal studies, but the point is that we're off to a great start – when we see lists like this, we become interested in an ingredient's supplemental potential. Especially for a nootropic when we see *neuroprotective* benefits on that list.

Different parts of *Oroxylum indicum* have different properties – you have roots, root bark, fruit, and the *stem* bark. It's the latter that's used to create Sabroxy. Different extract methods may also lead to different properties.[79]

Point being, this is a wildly diverse plant that gives us a lot of options. And with Sabroxy, we're focusing *mostly* on **oroxylin A**:

Oroxylin A: Support the memory and neurons

Scientifically identified as 5,7-dihydroxy-6-methoxyflavone, oroxylin A is a flavonoid reported to have antagonistic properties at the GABA_A receptor.[77] This mechanism led early researchers to believe that it could increase *acetylcholine* release and result in memory enhancement.[73]

A few preclinical studies have shown neuroprotective properties that are worth exploring:

- In 2006, researchers found that oroxylin A has an *awakening effect* and significantly improved motor coordination while decreasing drug-induced sleep time.[78]

In their conclusion, the researchers wrote that "*oroxylin A didn't produce anxiolysis and instead, produce awakening effect.*"[78]

Note, however, that this extract was from a different plant – see the sidebar to the right.

- In 2007, another team of researchers working in parallel published a study demonstrating that oroxylin A significantly improved cognitive scores in memory-impaired mice.[73] Their maze times and swimming distance trials improved, and the authors stated that "*it can be assumed that oroxylin A increases ACh [acetylcholine] release in the hippocampus and basal forebrain, and that this results in memory enhancement.*"[73]

They concluded,

Not just found in *Oroxylum Indicum*!

Note that oroxylin A is not *exclusive* to *Oroxylum Indicum*. The compound can also be found in plants like *Scutellaria baicalensis* (*Chinese skullcap*),[73] another good source. In this article, we look at research focusing on oroxylin A itself or *Oroxylum indicum* (where Sabroxy comes from), but there's even more similar research out there with skullcap as well!

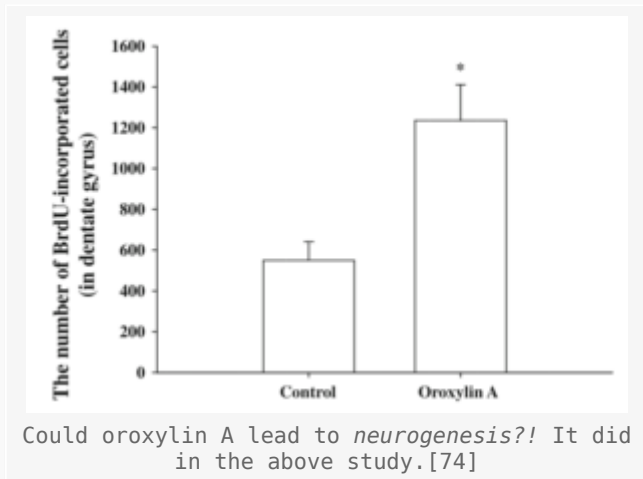
In summary, this study demonstrates that oroxylin A reverses the learning and memory deteriorations resulting from cholinergic dysfunction through central mediation involving the GABA_A receptors. Moreover, our results support the possibility that GABA_A receptor antagonists have a positive influence on learning and memory.[73]

Additionally, there were cognition gains in *unimpaired* mice,[73] which is promising for healthy users.

- In 2010, the same research team returned to better understand the mechanisms behind the previous study.[74] This time around, they found *neurogenesis* in mice, concluding:

In conclusion, the present study revealed that oroxylin A stimulates progenitor cell proliferation and new born cell survival in a dose-dependent and time-dependent manner. These results suggested that the increase in neurogenesis by oroxylin A could be associated with its cognitive enhancing and/or neuroprotective effects.[74]

- In 2013, the researchers behind the 2006 Park study[78] returned to look into additional properties, finding that “oroxylin A improves ADHD-like behaviors” by enhancing dopamine and norepinephrine neurotransmission![75]



Dopamine is known for its feel-good, rewarding properties, and is of interest in nootropics. This leads us to believe that Sabroxy will pair well with L-tyrosine.

- In 2021, another team of researchers found that Oroxylin A significantly increased the complex-I and complex-IV activities in the brain of mice with chemotherapy-induced cognitive deficits.[76] These measurements index mitochondrial health (they measure how well the cells cell to produce energy), and cellular health is something we always follow closely on PricePLOW.

Overall, Sabroxy is extraordinarily promising, although we obviously need more human data. Its mechanisms of *acetylcholine production*, *neurogenesis*, *dopamine* and *norepinephrine* support, and *mitochondrial health* in the brain are well worth exploring further. This should pair very well with the L-tyrosine in Clarity Powder.

Total Caffeine Yield – 137.5 mg (from Caffeine Anhydrous – 100mg and ZumXR Delayed Release Caffeine – 50 mg)

Arms Race included a very unique **caffeine** blend that includes two forms of caffeine, to provide fast and *delayed* release energy:

- 100 milligrams of **caffeine anhydrous**, providing 100 milligrams of caffeine
- 50 milligrams of **zumXR Delayed Release Caffeine**, yielding 37.5 milligrams of caffeine

Most readers will know how caffeine affects them, so let's first talk about how this blend hits differently.

100 milligrams now, 37.5 later



The 100 milligrams from caffeine anhydrous will come quickly – like any other caffeinated beverage. However, the final 37.5 milligrams will strike *later*. Note that it's the *delayed* release version from zumXR, *not* the “extended” release one. What this means is that the caffeine will not be absorbed until it is released, and that happens roughly an hour later than normal!

Per zumXR's specifications, one hour after taking the delayed release version, not more than 25% will be released. But after *two* hours, 80% of it will be released![80]

This provides the initial pop of caffeine that you're used to feeling from the anhydrous form, but an extra *surge* of caffeine about an hour and a half later to top off your energy stores. It's not a huge yield – just another 37.5 milligrams – but it may keep you going and give you a second “pop”.

Why caffeine in a nootropic?

- More scientifically known as *trimethylxanthine*, caffeine is here to wake you

up – it crosses the blood-brain-barrier and inhibits adenosine, keeping you awake.[81] This leads to reduced fatigue and improved cognitive results (as well as better physical performance when dosed even higher).[81]

Some studies show improved reaction time too,[82,83] which is something we'd of course love to see in a nootropic.

Ultimately, you know how caffeine's going to do you – this isn't a huge dose so you can still get your morning coffee or pre-workout supplement. It's enough to help wire you in, and is in a very unique blend that'll *strike twice* to sustain your energy longer than you'd otherwise think!

- **Huperzia serrata Extract (leaf and stem) (1% Huperzine A) – 20 mg**

Up above, we discuss how *Alpha-GPC* is a great, highly bioavailable choline source, which leads to increased *acetylcholine* production. Now, we get to *prolong* those effects, thanks to a large *200 microgram* dose of **Huperzine A**, which comes from a 1% standardization of *Huperzia Serrata* extract.



Don't eliminate it outright, but do get estrogen in check. Arms Race Stabilize can help with that!

Reason being, huperzine A is a natural *acetylcholinesterase inhibitor*.[84] This means that it *prevents* the early breakdown of acetylcholine, by inhibiting the enzyme that breaks it down. Because of this mechanism – which research has shown to outperform certain cognitive drugs – huperzine A “has

realistic anti-inflammatory, neuroprotective, and antiepileptic potential.”[84]

It’s affectionately called “Hoop A” and labeled as *HupA* in some studies. Some of the more impressive research performed on the ingredient shows that Huperzine A can boost learning capability as well as cognitive performance.[85] Even more impressively, there’s been research showing *neurogenesis* – it’s actually been shown to stimulate new nerve growth![86]

This is a perfect way to end the label – and going along with the potential acetylcholine boost from Sabroxy and the large dose of Alpha-GPC, we have a large dose here as well. Lately we haven’t seen the *200 microgram* yield as often as we did years past, so it’s nice to see Julian Smith keeping us going with a strong finish.

Flavors Available

Now that it’s no longer in capsule form, we have *flavors* – and Clarity Powder takes some notes from the recent *Nite Nite* launch:



Find Focus and Calm Energy with the New Clarity

Arms Race Nutrition prides itself on blending *old-school dedication* with *modern science* to deliver a strong line of supplements for driven, committed

individuals – including the ARN team themselves. Such levels of dedication demand *putting in hard work*, which can be extremely taxing on the brain. The ARN Team knows this and, thankfully, they've created a product that can be of use in this regard.

Julian Smith found his success through an incredible amount of grit and determination, launching multiple business ventures while growing his online presence and making gains in the gym. Add Doug Miller's supplement and business expertise and David Dodrill's *drive* to the mix, and you have a team that's quite simply been unstoppable as of late.

Clarity is delivered in this *science-backed, efficacious* formula that can help raise your game to levels that help you spend mental energy on the things that warrant it, not the things that are going to waste it and hurt your mood. If you need some help locking into your priorities and keeping your spirit on-point, Clarity powder is worth checking out.

Arms Race Nutrition Clarity – Deals and Price Drop Alerts

Get Price Alerts

Get Clarity Price Alerts Get Arms Race Nutrition alerts Get Nootropics price drops

Also get hot deal alerts

No spam, no scams.

Disclosure: PricePlow relies on pricing from stores with which we have a business relationship. We work hard to keep pricing current, but you may find a better offer.

Posts are sponsored in part by the retailers and/or brands listed on this page.

Note: This article was originally published on March 25, 2021 and was updated on October 25, 2022 with the new powder label. The capsule version may still be available – for a write-up, please contact us.

References

1. Vijaya Juturu, James R. Komorowski; US7576132B2 – “Arginine silicate inositol complex and use thereof”; United States Patent and Trademark Office; 2002; <https://patents.google.com/patent/US7576132>
2. Moinard, C., et al. “Dose-Ranging Effects of Citrulline Administration on Plasma Amino Acids and Hormonal Patterns in Healthy Subjects: The Citrudose Pharmacokinetic Study.” *British Journal of Nutrition*, vol. 99, no. 4, 22 Oct. 2007, pp. 855–862, 10.1017/s0007114507841110; <https://pubmed.ncbi.nlm.nih.gov/17953788/>
3. Castillo, L., et al. “Splanchnic Metabolism of Dietary Arginine in Relation to Nitric Oxide Synthesis in Normal Adult Man.” *Proceedings of the National Academy of Sciences of the United States of America*, vol. 90, no. 1, 1 Jan. 1993, p. 193, 10.1073/pnas.90.1.193; <https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC45626/>
4. Wu, Guoyao. “Intestinal Mucosal Amino Acid Catabolism.” *The Journal of Nutrition*, vol. 128,

- no. 8, 1 Aug. 1998, pp. 1249–1252, 10.1093/jn/128.8.1249;
<https://pubmed.ncbi.nlm.nih.gov/9687539/>
5. O'sullivan, D., et al. "Hepatic Zonation of the Catabolism of Arginine and Ornithine in the Perfused Rat Liver." *Biochemical Journal*, vol. 330, no. Pt 2, 1 Mar. 1998, p. 627, 10.1042/bj3300627; <https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC1219183/>
 6. Sandler, D., et al. June 2016. "Absorption of Bonded Arginine Silicate Compared to Individual Arginine and Silicon Components." *Journal of the International Society of Sports Nutrition* vol. 13. <https://jissn.biomedcentral.com/articles/10.1186/s12970-016-0144-9>
 7. Komorowski, J., Perez, S., & Sylla, S; "Arginase Inhibition by Inositol-stabilized Arginine Silicate (ASI; Nitrosigine); A Novel Mechanism by which ASI Enhances Arginine Bioavailability"; Poster Presentation. Retrieved from <https://www.eventscribe.com/2018/Nutrition2018/ajaxcalls/PosterInfo.asp?efp=UlhTRFpZVVI00DYw&PosterID=146640&rnd=0.1401379>
 8. Gonzalez, D, et al; "Effects of Arginine Silicate and Inositol Ingestion on Cognitive and Executive Function in Gamers"; *International Society of Sports Nutrition; ISSN 2021 Presentation Poster; 2021*; <https://blog.priceplow.com/wp-content/uploads/noolvl-short-term-memory-reaction-time-issn-2021.pdf>
 9. Evans, M., Zakaria, N., & Marzuk, M; "An Evaluation of the Effects of Inositol-Stabilized Arginine Silicate (ASI; Nitrosigine) in Preventing the Decline of Cognitive Function Caused by Strenuous Exercise"; *International Society of Sports Nutrition 2018 Conference; 2018*; <https://blog.priceplow.com/wp-content/uploads/nitrosigine-preventing-cognitive-decline-caused-by-strenuous-exercise.pdf>
 10. Kalman, D., Hewlings, S., Sylla, S., Ojalvo, S., & Komorowski, J; "An evaluation of the effects of inositol-stabilized arginine silicate (ASI; Nitrosigine) on cognitive flexibility"; *Nutrients; 2016*; <https://blog.priceplow.com/wp-content/uploads/nitrosigine-cognitive-flexibility-issn-2018.pdf>
 11. Gills, Joshua L., et al. "Acute Inositol-Stabilized Arginine Silicate Improves Cognitive Outcomes in Healthy Adults." *Nutrients*, vol. 13, no. 12, 1 Dec. 2021, 10.3390/nu13124272; <https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC8703995/>
 12. Sowinski, Ryan, et al. "Effects of Inositol-Enhanced Bonded Arginine Silicate Ingestion on Cognitive and Executive Function in Gamers." *Nutrients*, vol. 13, no. 11, 1 Nov. 2021, p. 3758, 10.3390/nu13113758; <https://www.mdpi.com/2072-6643/13/11/3758/htm>
 13. Tartar, J. L., et al; "A Prospective Study Evaluating the Effects of a Nutritional Supplement Intervention on Cognition, Mood States, and Mental Performance in Video Gamers."; *Nutrients – MDPI Open Access Journals; 11, 2326; Oct. 1, 2019*; <https://www.mdpi.com/2072-6643/11/10/2326/htm>
 14. Emerson, Katie, et al; "Effects of a Bonded Arginine Silicate Inositol Combination (noolVL) on Cognitive Function in eSports Gamers"; *Experimental Biology 2022; Poster Presentation; April 8, 2022*; <https://blog.priceplow.com/wp-content/uploads/noolvl-gamers-experimental-biology-2022-poster.pdf>
 15. Michell, R H; "Inositol Phospholipids and Cell Surface Receptor Function."; *Biochimica Et Biophysica Acta; U.S. National Library of Medicine; 25 Mar. 1975*; <https://www.ncbi.nlm.nih.gov/pubmed/164246>
 16. Levine, J; "Controlled Trials of Inositol in Psychiatry."; *European Neuropsychopharmacology : the Journal of the European College of Neuropsychopharmacology; U.S. National Library of Medicine; May 1997*; <https://www.ncbi.nlm.nih.gov/pubmed/9169302>
 17. Barkai, A I, et al; "Reduced Myo-Inositol Levels in Cerebrospinal Fluid from Patients with Affective Disorder."; *Biological Psychiatry; U.S. National Library of Medicine; Feb. 1978*; <https://www.ncbi.nlm.nih.gov/pubmed/623854>
 18. Sahlin, Kent; "Boosting fat burning with carnitine: an old friend comes out from the shadow"; *Journal of physiology; vol. 589; Pt 7; 2011; 1509-10*; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3099008/>
 19. Karanth, Jyothsna, and K Jeevaratnam. "Effect of carnitine supplementation on mitochondrial enzymes in liver and skeletal muscle of rat after dietary lipid manipulation and physical activity." *Indian journal of experimental biology* vol. 48,5 (2010): 503-10; <https://pubmed.ncbi.nlm.nih.gov/20795369/>
 20. Kumaran, S et al. "Supplementation of L-carnitine improves mitochondrial enzymes in heart and skeletal muscle of aged rats." *Experimental aging research* vol. 31,1 (2005): 55-67. doi:10.1080/03610730590882846; <https://www.tandfonline.com/doi/full/10.1080/03610730590882846>
 21. Virmani, Mohamed Ashraf, and Maria Cirulli. "The Role of l-Carnitine in Mitochondria,

- Prevention of Metabolic Inflexibility and Disease Initiation." *International journal of molecular sciences* vol. 23,5 2717. 28 Feb. 2022, doi:10.3390/ijms23052717; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC35269860/>
22. Ruggenti, P, et al; "Ameliorating Hypertension and Insulin Resistance in Subjects at Increased Cardiovascular Risk: Effects of Acetyl-L-Carnitine Therapy."; *Current Neurology and Neuroscience Reports*; U.S. National Library of Medicine; Sept. 2009; <https://www.ahajournals.org/doi/10.1161/HYPERTENSIONAHA.109.132522>
 23. Volek, JS et al; "L-Carnitine L-tartrate supplementation favorably affects markers of recovery from exercise stress;" *Am J Physiol Endocrinol Metab.* 2002 Feb;282(2):E474-82; <https://journals.physiology.org/doi/full/10.1152/ajpendo.00277.2001>
 24. Vaz, F. M., et al. "Carnitine Biosynthesis: Identification of the CDNA Encoding Human Gamma-Butyrobetaine Hydroxylase." *Biochemical and Biophysical Research Communications*, vol. 250, no. 2, 18 Sept. 1998, pp. 506–510, [https://linkinghub.elsevier.com/retrieve/pii/S0006-291X\(98\)99343-3](https://linkinghub.elsevier.com/retrieve/pii/S0006-291X(98)99343-3)
 25. Traina, Giovanna; "The Neurobiology of Acetyl-L-Carnitine."; *Frontiers in Bioscience (Landmark Edition)*; U.S. National Library of Medicine; 1 June 2016; <https://www.ncbi.nlm.nih.gov/pubmed/27100509>
 26. Parnetti, L, et al; "Pharmacokinetics of IV and oral acetyl-L-carnitine in a multiple dose regimen in patients with senile dementia of Alzheimer type"; *Eur J Clin Pharmacol.* 1992; 42(1):89-93; <https://www.ncbi.nlm.nih.gov/pubmed/1541322>
 27. Ando, S, et al; "Enhancement of Learning Capacity and Cholinergic Synaptic Function by Carnitine in Aging Rats."; *Journal of Neuroscience Research*; U.S. National Library of Medicine; 15 Oct. 2001; <https://www.ncbi.nlm.nih.gov/pubmed/11592123>
 28. Smeland, Olav B et al. "Chronic acetyl-L-carnitine alters brain energy metabolism and increases noradrenaline and serotonin content in healthy mice." *Neurochemistry international* vol. 61,1 (2012): 100-7. doi:10.1016/j.neuint.2012.04.008; [https://linkinghub.elsevier.com/retrieve/pii/S0197-0186\(12\)00139-8](https://linkinghub.elsevier.com/retrieve/pii/S0197-0186(12)00139-8)
 29. Passeri, M, et al; "Acetyl-L-Carnitine in the Treatment of Mildly Demented Elderly Patients."; *International Journal of Clinical Pharmacology Research*; U.S. National Library of Medicine; 1990; <https://www.ncbi.nlm.nih.gov/pubmed/2201659>
 30. Gómez, Luis A et al. "Acetyl-L-carnitine supplementation reverses the age-related decline in carnitine palmitoyltransferase 1 (CPT1) activity in interfibrillar mitochondria without changing the L-carnitine content in the rat heart." *Mechanisms of ageing and development* vol. 133,2-3 (2012): 99-106. doi:10.1016/j.mad.2012.01.007; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4147858/>
 31. Attipoe, S. et al; Tyrosine for Mitigating Stress and Enhancing Performance in Healthy Adult Humans, a Rapid Evidence Assessment of the Literature; *Military Medicine*; Volume 180, Issue 7, July 2015, Pages 754–765; <https://academic.oup.com/milmed/article/180/7/754/4160625#101253256>
 32. Jongkees, Bryant J et al. "Effect of tyrosine supplementation on clinical and healthy populations under stress or cognitive demands—A review." *Journal of psychiatric research* vol. 70 (2015): 50-7. doi:10.1016/j.jpsychires.2015.08.014 [https://linkinghub.elsevier.com/retrieve/pii/S0022-3956\(15\)00247-2](https://linkinghub.elsevier.com/retrieve/pii/S0022-3956(15)00247-2)
 33. Attipoe, Selasi, et al. "Tyrosine for Mitigating Stress and Enhancing Performance in Healthy Adult Humans, a Rapid Evidence Assessment of the Literature." *Military Medicine*, vol. 180, no. 7, July 2015, pp. 754–765, 10.7205/milmed-d-14-00594; <https://academic.oup.com/milmed/article/180/7/754/4160625>
 34. Pomeroy, Diane E., et al. "A Systematic Review of the Effect of Dietary Supplements on Cognitive Performance in Healthy Young Adults and Military Personnel." *Nutrients*, vol. 12, no. 2, 20 Feb. 2020, p. 545, 10.3390/nu12020545; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7071459/>
 35. Mullur, Rashmi et al. "Thyroid hormone regulation of metabolism." *Physiological reviews* vol. 94,2 (2014): 355-82. doi:10.1152/physrev.00030.2013; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4044302/>
 36. Rousset, Bernard. "Chapter 2 Thyroid Hormone Synthesis And Secretion." *Endotext*. U.S. National Library of Medicine, 2 Sept. 2015; <https://www.ncbi.nlm.nih.gov/books/NBK285550/>
 37. Rousset, Bernard, et al. "Chapter 2 Thyroid Hormone Synthesis and Secretion." *Nih.gov, MDText.com, Inc.*, 2 Sept. 2015; <https://www.ncbi.nlm.nih.gov/books/NBK285550/>
 38. Mullur, Rashmi, et al. "Thyroid Hormone Regulation of Metabolism." *Physiological Reviews*, vol. 94, no. 2, Apr. 2014, pp. 355–382, 10.1152/physrev.00030.2013. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4044302/>
 39. Davis, J D, and G Tremont. "Neuropsychiatric aspects of hypothyroidism and treatment reversibility. ." *Minerva endocrinologica* vol. 32,1 (2007): 49-65.

<http://www.minervamedica.it/index2.t?show=R07Y2007N01A0049>

40. Sanders LM, Zeisel SH; "Choline: Dietary Requirements and Role in Brain Development;" *Nutrition today*; 2007;42(4):181-186; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2518394/>
41. Purves D, Augustine GJ, Fitzpatrick D, et al.; "Neuroscience;" 2nd edition. Sunderland (MA): Sinauer Associates; 2001. Acetylcholine; <https://www.ncbi.nlm.nih.gov/books/NBK11143/>
42. Hasselmo ME; "The role of acetylcholine in learning and memory;" *Curr Opin Neurobiol.* 2006;16(6):710-715; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2659740/>
43. Jones BE; "From waking to sleeping: neuronal and chemical substrates". *Trends Pharmacol. Sci.*; 2005; 26 (11): 578-86; <https://www.ncbi.nlm.nih.gov/pubmed/16183137>
44. Marcus L, et al; "Evaluation of the effects of two doses of alpha glycerylphosphorylcholine on physical and psychomotor performance;" *J Int Soc Sports Nutr*; 2017;14:39; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5629791/>
45. Agbafor, K. N., and N. Nwachukwu. "Phytochemical Analysis and Antioxidant Property of Leaf Extracts of *Vitex Doniana* and *Mucuna Pruriens*." *Biochemistry Research International*, vol. 2011, 2011, 10.1155/2011/459839; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3085303/>
46. Misra, Laxminarain, and Hildebert Wagner. "Extraction of Bioactive Principles from *Mucuna Pruriens* Seeds." *Indian Journal of Biochemistry & Biophysics*, vol. 44, no. 1, 1 Feb. 2007, pp. 56-60; <https://pubmed.ncbi.nlm.nih.gov/17385342/>
47. Kamkaen, Narisa et al. "Mucuna pruriens Seed Aqueous Extract Improved Neuroprotective and Acetylcholinesterase Inhibitory Effects Compared with Synthetic L-Dopa." *Molecules (Basel, Switzerland)* vol. 27,10 3131. 13 May. 2022, doi:10.3390/molecules27103131; <https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/35630617/>
48. Katzenschlager, R, et al. "Mucuna Pruriens in Parkinson's Disease: A Double Blind Clinical and Pharmacological Study." *Journal of Neurology, Neurosurgery, and Psychiatry*, vol. 75, no. 12, 1 Dec. 2004, pp. 1672-1677, 10.1136/jnnp.2003.028761. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1738871/>
49. Ly, Tram Ngoc, et al. "Isolation and Characterization of Some Antioxidative Compounds from the Rhizomes of Smaller Galanga (*Alpinia Officinarum* Hance)." *Journal of Agricultural and Food Chemistry*, vol. 51, no. 17, 13 Aug. 2003, pp. 4924-4929, 10.1021/jf034295m; <https://pubmed.ncbi.nlm.nih.gov/12903947/>
50. Hanish Singh, J. C., et al. "Neuroprotective Effect of *Alpinia Galanga* (L.) Fractions on A β (25-35) Induced Amnesia in Mice." *Journal of Ethnopharmacology*, vol. 138, no. 1, 31 Oct. 2011, pp. 85-91, 10.1016/j.jep.2011.08.048; <https://pubmed.ncbi.nlm.nih.gov/21911048/>
51. Srivastava, Shalini, et al. "Effect of *Alpinia Galanga* on Mental Alertness and Sustained Attention with or without Caffeine: A Randomized Placebo-Controlled Study." *Journal of the American College of Nutrition*, vol. 36, no. 8, 14 Sept. 2017, pp. 631-639, 10.1080/07315724.2017.1342576. <https://www.essentialnutrition.com.br/media/artigos/quantum/8.%20Effect%20of%20Alpinia%20galanga.pdf>
52. Saha, Sayan, and Sugato Banerjee. "Central Nervous System Stimulant Actions of *Alpinia Galanga* (L.) Rhizome: A Preliminary Study." *Indian Journal of Experimental Biology*, vol. 51, no. 10, 1 Oct. 2013, pp. 828-832; <https://pubmed.ncbi.nlm.nih.gov/24266107/>
53. Benson, Sarah, et al; "An Acute, Double-Blind, Placebo-Controlled Cross-over Study of 320 Mg and 640 Mg Doses of *Bacopa Monnieri* (CDRI 08) on Multitasking Stress Reactivity and Mood.;" *Phytotherapy Research : PTR*; U.S. National Library of Medicine; Apr. 2014; <https://www.ncbi.nlm.nih.gov/pubmed/23788517>
54. Calabrese, Carlo et al; "Effects of a standardized *Bacopa monnieri* extract on cognitive performance, anxiety, and depression in the elderly: a randomized, double-blind, placebo-controlled trial.;" *Journal of alternative and complementary medicine (New York, N.Y.)*; vol. 14,6; 2008; 707-13; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3153866/>
55. Vollala, Venkata Ramana et al. "Enhancement of basolateral amygdaloid neuronal dendritic arborization following *Bacopa monniera* extract treatment in adult rats.;" *Clinics (Sao Paulo, Brazil)*; vol. 66,4; 2011; 663-71; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3093798/>
56. "Dendrites – an Overview | ScienceDirect Topics." *Sciencedirect.com*, 2015; <https://www.sciencedirect.com/topics/psychology/dendrites>
57. Wu, Xundong et al. "How Dendrites Affect Online Recognition Memory." *PLoS computational biology* vol. 15,5 e1006892. 3 May. 2019, doi:10.1371/journal.pcbi.1006892; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6527246/>
58. Stough, C, et al; "The Chronic Effects of an Extract of *Bacopa Monniera* (Brahmi) on Cognitive Function in Healthy Human Subjects.;" *Psychopharmacology*; U.S. National Library of Medicine; Aug. 2001; <https://www.ncbi.nlm.nih.gov/pubmed/11498727>

59. Simpson, Tamara et al; "Bacopa monnieri as an Antioxidant Therapy to Reduce Oxidative Stress in the Aging Brain."; Evidence-based complementary and alternative medicine : eCAM; vol. 2015; 2015; 615384; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4564646/>
60. Chaudhary, AK, et al. "A Review on the Taxonomy, Ethnobotany, Chemistry and Pharmacology Of *Oroxylum Indicum* Vent." Indian Journal of Pharmaceutical Sciences, vol. 73, no. 5, 2011, p. 483, 10.4103/0250-474x.98981; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3425058/>
61. Dinda, B., et al. "Oroxylum Indicum (L.) Kurz, an Important Asian Traditional Medicine: From Traditional Uses to Scientific Data for Its Commercial Exploitation." Journal of Ethnopharmacology, vol. 161, Feb. 2015, pp. 255–278, 10.1016/j.jep.2014.12.027; <https://pubmed.ncbi.nlm.nih.gov/25543018/>
62. Sannigrahi, S, et al. "In Vitro Antioxidant Potential of Different Parts of *Oroxylum Indicum*: A Comparative Study." Indian Journal of Pharmaceutical Sciences, vol. 72, no. 2, 2010, p. 267, 10.4103/0250-474x.65013; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2929795/>
63. Doshi, Krunal, et al. "Anti-Inflammatory Activity of Root Bark and Stem Bark of *Shyonaka*." Journal of Ayurveda and Integrative Medicine, vol. 3, no. 4, 2012, pp. 194–197, 10.4103/0975-9476.104434; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3545239/>
64. Singh, Jyotsna, and Poonam Kakkar. "Modulation of Liver Function, Antioxidant Responses, Insulin Resistance and Glucose Transport by *Oroxylum Indicum* Stem Bark in STZ Induced Diabetic Rats." Food and Chemical Toxicology, vol. 62, Dec. 2013, pp. 722–731, 10.1016/j.fct.2013.09.035; <https://pubmed.ncbi.nlm.nih.gov/24140466>
65. Hengpratom, Tanaporn, et al. "Oroxylum Indicum (L.) Kurz Extract Inhibits Adipogenesis and Lipase Activity in Vitro." BMC Complementary and Alternative Medicine, vol. 18, 8 June 2018, p. 177, 10.1186/s12906-018-2244-3; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5994072/>
66. Mangal, Priyanka, et al. "Screening of Six Ayurvedic Medicinal Plants for Anti-Obesity Potential: An Investigation on Bioactive Constituents from *Oroxylum Indicum* (L.) Kurz Bark." Journal of Ethnopharmacology, vol. 197, 2 Feb. 2017, pp. 138–146, 10.1016/j.jep.2016.07.070; <https://pubmed.ncbi.nlm.nih.gov/27469197>
67. Veeresham, Ciddi, et al. "Anti-Arthritic Activity of Root Bark of *Oroxylum Indicum* (L.) Vent against Adjuvant-Induced Arthritis." Pharmacognosy Research, vol. 5, no. 2, 2013, p. 121, 10.4103/0974-8490.110543; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3685761/>
68. Radhika, L G, et al. "Phytochemical and Antimicrobial Study of *Oroxylum Indicum*." Ancient Science of Life, vol. 30, no. 4, 2011, pp. 114–20; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3336262/>
69. Kumar, D.R. Naveen, et al. "Cytotoxicity, Apoptosis Induction and Anti-Metastatic Potential of *Oroxylum Indicum* in Human Breast Cancer Cells." Asian Pacific Journal of Cancer Prevention, vol. 13, no. 6, 30 June 2012, pp. 2729–2734, 10.7314/apjcp.2012.13.6.2729; <https://pubmed.ncbi.nlm.nih.gov/22938449>
70. Mairuae, Nootchanat, et al. "Oroxylum Indicum (L.) Extract Protects Human Neuroblastoma SH-SY5Y Cells against β -Amyloid-Induced Cell Injury." Molecular Medicine Reports, 21 June 2019, 10.3892/mmr.2019.10411; <https://pubmed.ncbi.nlm.nih.gov/31257498>
71. Sultana, Sarwat, et al. "Nephroprotective Efficacy of Chrysin against Cisplatin-Induced Toxicity via Attenuation of Oxidative Stress." Journal of Pharmacy and Pharmacology, vol. 64, no. 6, 22 Mar. 2012, pp. 872–881, 10.1111/j.2042-7158.2012.01470.x; <https://pubmed.ncbi.nlm.nih.gov/22571266>
72. Mairuae, Nootchanat, et al. "Oroxylum Indicum (L.) Extract Protects Human Neuroblastoma SH-SY5Y Cells against β -Amyloid-Induced Cell Injury." Molecular Medicine Reports, 21 June 2019, 10.3892/mmr.2019.10411; <https://pubmed.ncbi.nlm.nih.gov/31257498/>
73. Kim, Dong Hyun, et al. "The Ameliorating Effect of Oroxylin a on Scopolamine-Induced Memory Impairment in Mice." Neurobiology of Learning and Memory, vol. 87, no. 4, May 2007, pp. 536–546, 10.1016/j.nlm.2006.11.005; <https://pubmed.ncbi.nlm.nih.gov/17196405/>
74. Lee, Seungjoo, et al. "Oroxylin A, a Flavonoid, Stimulates Adult Neurogenesis in the Hippocampal Dentate Gyrus Region of Mice." Neurochemical Research, vol. 35, no. 11, 1 Aug. 2010, pp. 1725–1732, 10.1007/s11064-010-0235-y; <https://pubmed.ncbi.nlm.nih.gov/20680459/>
75. Yoon, Seo Young, et al. "Oroxylin a Improves Attention Deficit Hyperactivity Disorder-like Behaviors in the Spontaneously Hypertensive Rat and Inhibits Reuptake of Dopamine in Vitro." Archives of Pharmacal Research, vol. 36, no. 1, Jan. 2013, pp. 134–140, 10.1007/s12272-013-0009-6; <https://pubmed.ncbi.nlm.nih.gov/23371806/>
76. Pondugula, Satyanarayana R., et al. "Oroxylum Indicum Ameliorates Chemotherapy Induced Cognitive Impairment." PLOS ONE, vol. 16, no. 6, 3 June 2021, p. e0252522, 10.1371/journal.pone.0252522; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8174701/>
77. Huen, Michael S.Y, et al. "5,7-Dihydroxy-6-Methoxyflavone, a Benzodiazepine Site Ligand

- Isolated from *Scutellaria Baicalensis* Georgi, with Selective Antagonistic Properties." *Biochemical Pharmacology*, vol. 66, no. 1, July 2003, pp. 125–132, 10.1016/s0006-2952(03)00233-8; <https://pubmed.ncbi.nlm.nih.gov/12818372/>
78. Hyung-Geun, Park, et al. "Different Effects of Flavonoids in *Scutellaria Baicalensis* on Anxious and Sedative Behaviors." *Biomolecules & Therapeutics*, vol. 14, no. 2, 2006, pp. 83–89; <https://koreascience.kr/article/JAK0200625121616561.view> (full-text PDF)
79. Begum, Mst. Marium, et al. "Ethnopharmacological Inspections of Organic Extract of *Oroxylum Indicum* in Rat Models: A Promising Natural Gift." *Evidence-Based Complementary and Alternative Medicine : ECAM*, vol. 2019, 3 Apr. 2019, p. 1562038, 10.1155/2019/1562038; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6470466/>
80. "zumXR Targeted Release Caffeine"; PLT Health; Received January 2021; <https://blog.priceplow.com/wp-content/uploads/zumxr-sales-sheet-2021.pdf>
81. Goldstein, E.R., Ziegenfuss, T., Kalman, D. et al.; "International society of sports nutrition position stand: caffeine and performance"; *J Int Soc Sports Nutr* 7, 5 (2010); <https://link.springer.com/article/10.1186/1550-2783-7-5>
82. Childs, Emma, and Harriet de Wit. "Subjective, Behavioral, and Physiological Effects of Acute Caffeine in Light, Nondependent Caffeine Users." *Psychopharmacology*, vol. 185, no. 4, 16 Mar. 2006, pp. 514–523, 10.1007/s00213-006-0341-3; <https://pubmed.ncbi.nlm.nih.gov/16541243/>
83. Duvnjak-Zaknich, Daniel M., et al. "Effect of Caffeine on Reactive Agility Time When Fresh and Fatigued." *Medicine & Science in Sports & Exercise*, vol. 43, no. 8, Aug. 2011, pp. 1523–1530, 10.1249/mss.0b013e31821048ab; <https://pubmed.ncbi.nlm.nih.gov/21266929/>
84. Damar, U., Gersner, R., et al. Expert Review of Neurotherapeutics; "Huperzine A as a neuroprotective and antiepileptic drug: a review of preclinical research." 2016; <https://pubmed.ncbi.nlm.nih.gov/27086593/>
85. Strumia, E., Pelliccia, F., et al. *Advances in Therapy*; "Creatine phosphate: pharmacological and clinical perspectives." 2012; <https://pubmed.ncbi.nlm.nih.gov/22297802>
86. Ma, Tuo, et al. "Huperzine a Promotes Hippocampal Neurogenesis in Vitro and in Vivo." *Brain Research*, vol. 1506, 19 Apr. 2013, pp. 35–43, 10.1016/j.brainres.2013.02.026; <https://pubmed.ncbi.nlm.nih.gov/23454433/>