Inspired Nutra EMBER STIM: An Aggressively Strong Fat Burner

written by PricePlow Staff | September 18, 2022

If you missed the ultra-unique *69th Episode of the PricePlow Podcast with Chris Waldrum* of **Inspired Nutraceuticals**, then strap yourself in for quite the treat. In that episode, we talk a *little* bit about supplementation and Chris's bodybuilding adventure, and then head very far off the beaten path.

EMBER STIM will make you feel like you're on fire. In a good way. In a fat-melting way.

Back to business, this summer, Inspired Nutraceuticals released a new stimulant-based weight loss aid, the **Ember Premium Stimulant Fat Burner**. This is the highly-aggressive counterpart to the Ember NON-STIM Fat Burner, a formula featuring the acclaimed MitoBurn/CaloriBurn stack that we covered earlier this spring.

Inspired Nutra's Ember Stim Fat Burner: Get Ready for *Energy*

In this capsule-based fat burner, we have 300 milligrams of caffeine – roughly standard these days – but it's paired with a *lot* of stimulatory support, including:

- *Eria jarensis*
- A double synephrine blend (synephrine from *SYNapsis* and isopropylnorsynephrine from *IsoSYN*)
- A double yohimbine blend (from yohimbine HCl and rauwolscine / alpha-yohimbine)

There’s even a new *dendrobium* extract named *Dendright* we have to get into.

To put it simply, this is not a rookie’s fat burner. Let’s dig in below:

Inspired Nutraceuticals EMBER Premium Stimulant Fat Burner – Deals and Price Drop Alerts

Get Price Alerts

Ember Premium Stimulant Fat Burner Ingredients

In a single *2-capsule serving* of EMBER: Stim from Inspired Nutraceuticals, you get the following:

- **Caffeine Anhydrous – 300 mg**

SUPPLEMENT FACTS		
Serving Size: 2 Capsules Servings per Container: 30		
	Amount Per Serving	%DV**
Choline (as Choline DL- Bitartrate)	120 mg	22%
Caffeine Anhydrous	300 mg	**
CoLean™ (Choline DL-Bitartrate, Citicholine)	300 mg	**
IsoSYN™ (Citrus Medica Sarcodactylis Extract)	150 mg	**
Eria Jarensis	150 mg	**
Dimethylethanolamine	100 mg	**
SYNapsis™ (as Citrus Aurantium Extract Std. to 30% Alkaloids)(fruit))	100 mg	**
Dendright™ (Dendrobium Extract 1%)	50 mg	**
Yohimbine HCL	2 mg	**
Rauwolscine (Rauwolfia Vomitoria Root Extract (stnd. Min 90% Alpha Yohimbine)	2 mg	**
**Daily Value not established		
Other Ingredients: Plant Cellulose, Rice Flour, Silicon Dioxide, Magnesium Stearate.		

Caffeine is a stimulant that needs no introduction. As the most widely used (legal) psychoactive drug in the world, caffeine is capable of crossing the *brain-blood barrier*, enabling it to have

profound effects on mood, cognition, and physical performance.[1]

For example, caffeine directly fights fatigue by blocking the action of *adenosine*,[2] a chemical that accumulates in neural tissue while we're awake and causes us to feel tired as it builds up.

Less frequently discussed are the *metabolic effects* of caffeine consumption, which contribute directly to the established uses for caffeine.

Caffeine affects *cellular energy production* in a big way by inhibiting the enzyme *phosphodiesterase*,[3,4] which is responsible for breaking down *cyclic adenosine monophosphate* (cAMP),[3,4] a messenger molecule that signals cells to burn sugar and fatty acids for energy.

cAMP is a key regulator of human metabolic rate. More cAMP stimulation means a *faster metabolism*.[5]

Caffeine is particularly good at increasing the body's rate of *fat burning*. It has been shown to *increase* fat burning by as much as 50%,[6] which is frequently used in *fat burner* formulas like EMBER: Stim.

The body relies on energy to do work, so, unsurprisingly, phosphodiesterase inhibition via caffeine use has been shown to boost athletic and physical performance. It's also why caffeine is known as an *ergogenic aid*. Plenty of research shows that athletes who take caffeine are stronger, faster, and last longer.[7]

Caffeine is also considered a *nootropic*, as it speeds up reaction time,[8] increases *attentiveness*,[8,9] raises *alertness* levels,[9] and increases *working memory*,[10] the kind of memory your brain uses to retain information before consolidating it into long-term memories.

This might not immediately seem like something that's relevant to a fat-burner supplement, but we definitely think the mental benefits of caffeine can help with a cut. *Mental energy* is one of the things that people most often report lacking when restricting calories to lose weight, and caffeine can *definitely* help boost it.

A word about the dose: 300 milligrams is a pretty good dose of caffeine – and we have even more stimulants in here to follow. Habitual caffeine users *should* be able to handle it without too much of a problem, but if you're *not* a habitual caffeine user, or just don't know exactly how much caffeine you consume on a daily basis, don't assume that you'll be able to handle 300 milligrams. Start with a partial dose of EMBER: Stim, and assess your tolerance from there.

- **CoLean (Choline DL-Bitartrate, Citicholine) – 300 mg**

  Choline is crucial for building and maintaining *cellular membranes*,[11] the *phospholipid bilayer envelopes* that enclose the contents of each and every one of your cells, keeping nutrients in and toxins or pathogens out.

  That alone makes choline incredibly important, since cellular membranes are required for cellular health and optimal cellular function.

  Choline is also an important precursor to the neurotransmitter, *acetylcholine*,[12] which we at PricePlow often call "the learning neurotransmitter" owing to its central role in *memory consolidation*, by which your brain turns short-term memories into *long term* memories.[12]

  But the reason we see choline used in *fat-burner* supplements is because it also plays a key role in helping metabolize fat,[13-16] partly due to its ability to boost *carnitine levels in the body* by promoting carnitine retention.[17-19]

  Choline deficiency has terrible side effects. Being low in choline doesn't just affect acetylcholine levels (and hence, cognitive performance), but it can also lead to muscular atrophy and organ damage, including *liver fibrosis and steatosis* of the type seen in cases of non-alcoholic fatty liver disease (NAFLD). NAFLD is part of the *metabolic syndrome* that's associated with the onset of type 2 diabetes.[20]

  CoLean is a trademarked, proprietary blend of both *choline bitartrate* and *citicoline*, also known as *CDP-Choline*. We generally love choline blends, since each form provides separate benefits, but aren't sure of the composition inside.

- **IsoSYN (Citrus Medica Sarcodactylis Extract) – 150 mg**

  Many readers have probably heard of *synephrine, a* beta agonist[21] sourced from the *Citrus aurantium* fruit that can increase a person's metabolic rate by initiating the *fight or flight response*.

  The effect size of synephrine has been observed at *183 calories per day*,[22]

making it one of the most effective fat burning ingredients on the market. Synephrine also has *ergogenic properties*, increasing athletic performance[23] – all of this *without* significantly increasing heart rate or blood pressure.[24]

SYNMR Biotechnology is the manufacturer of isopropylnorsynephrine, a *stronger* synephrine.

SYNMR Biotechnology set out to create a *better synephrine* – and they found it in the form of **isopropylnorsynephrine**, a stimulant sourced from the ***Citrus medica sarcodactylis*** fruit. Now they're bringing it to market as **IsoSYN**, and the preliminary data on this ingredient looks promising, indeed.

Much like synephrine, IsoSYN works by activating *beta-adrenergic receptors*, thus initiating a fight-or-flight response that mobilizes *stored fat* for rapid energy consumption with *catecholamines* like adrenaline cortisol.

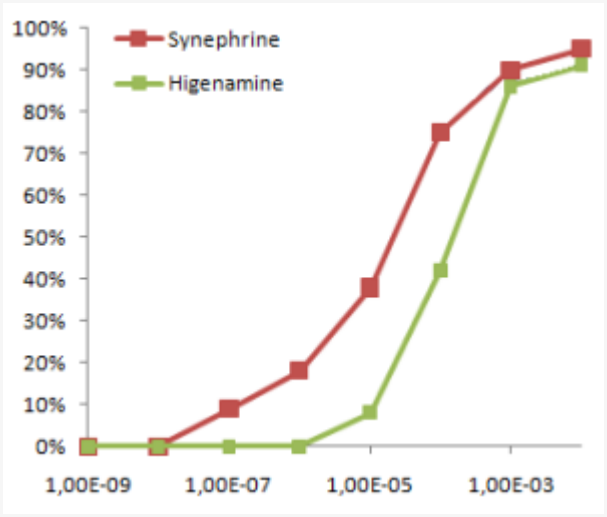
This process of releasing stored fat for emergency use is called *activated lipolysis*.

However, IsoSYN goes even further than synephrine when it comes to stimulating the metabolism – through the use of 3-isobutyl-1-methylxanthine (IBMX), IsoSYN triggers the production of extra *cAMP*, just like caffeine does.[25]

This leads to a *surplus* of cellular energy, which in turn helps fuel aggressive workouts.

IsoSYN is so good at stimulating lipolysis that it can even overcome the effects of *anti-lipolytic compounds*, and return the body to a baseline fat burning state.[25]

Isopropylnorsynephrine vs. synephrine: direct comparison



Synephrine is a much quicker beta-agonist than Higenamine, another common ingredient in fat burner supplements.

A 2011 study on isopropylnorsynephrine (also known as *betaphrine*[26]), published with the title *"A Stronger Lipolytic Agent in Human Adipocytes than Synephrine and Other Amines Present in Citrus aurantium,"* concluded exactly that – it appears to be a *much* better fat burner than synephrine,[25] which is really saying something.

How much stronger, you may ask? According to the authors of the paper, isopropylnorsynephrine is about *100-times more potent* than synephrine.[25] That's why you can see *relatively* low doses used, compared to the typical synephrine dose.

A viable *yohimbe* alternative for those who can't tolerate yohimbe

Importantly, the lipolytic mechanism of action behind IsoSYN is *not* related to alpha-adrenergic antagonism,[25] making it a great fat burner alternative for individuals who have difficulty tolerating *yohimbe*.

Isopropylnorsynephrine and safety

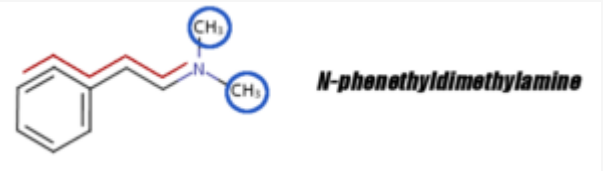
Importantly, preliminary animal studies conducted on IsoSYN have found that it has a key similarity to synephrine: just like synephrine, it does *not* appear to cause increased heart rate or blood pressure at efficacious doses.[26-28]

The question here is the dose. This is *not* 150 mg of isopropylnorsynephrine – but we don't know the standardization either! Normally the dosage is between 10 and 30 milligrams. We've contacted everyone involved here, but don't know what IsoSYN is currently standardized for. We'll update this article if we find out.

- **Eria Jarensis – 150 mg**

  Most extracts of ***Eria jarensis*** are standardized for an alkaloid called **N-**

phenethyl dimethylamine, a *strong* form of *phenylethylamine* (PEA).



N-Phenethyldimethylamine is like a PEA molecule, but with an *N,N' Alkyl* section that also prevents MAO from cleaving it… meaning a longer-lasting euphoric 'buzz' than regular PEA

If you've been around the supplement industry for a while, you've probably heard of PEA before. This *alkaloid* is famous for its potency as a *pre-workout stimulant*, owing to its ability to release *tons* of catecholamine neurotransmitters like dopamine, adrenaline, and noradrenaline – all of which will make you feel incredibly energized and euphoric.[29]

There's just one issue with PEA, which is that it's rapidly degraded, and rendered inert, by an enzyme called *monoamine oxidase* (MAO). So the effects of PEA only last for a few minutes.[30,31]

That's where **N-phenethyl dimethylamine** comes in. This molecule occurs naturally in the *Eria jarensis* plant, and consists of the PEA molecule with two more *alkyl* groups bonded to it in key locations.[32]

These alkyls help buffer the PEA against degradation by MAO, thus extending the duration of its effects,[32] and giving you a longer high than ordinary PEA.

We have a section about this in our long-form article, Eria Jarensis Extract / N-phenethyl dimethylamine: The Next Big Thing?

There isn't really much research on how this PEA or N-phenethyl dimethylamine can affect fat burning. But the bottom line is these ingredients will get you motivated to exercise, which is one of the best ways to increase your daily calorie burn.

- **Dimethylethanolamine – 100 mg**

  More commonly known as **DMAE**, *dimethylaminoethanol* is a choline-like compound that can have cholinergic effects by modulating choline metabolism.

  Specifically, DMAE can actually *increase* the amount of "free," or *bioavailable*, choline your body has by stimulating choline receptors.[30] Animal studies have shown that by sparing the choline that circulates in your

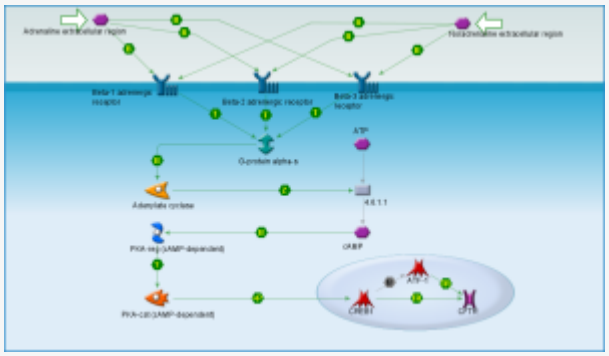
body's *peripheral tissues*, more choline is left over for use by your *central nervous system*.[29] So far as neurological and cognitive effects are concerned, this is *functionally* equivalent to increasing the choline levels in your body.

Because it helps make more choline available to the brain, DMAE can act as a *mood stabilizer and* improve symptoms in people with mild emotional problems.[32] One study actually measured subjects' *brain waves* with an EEG and found that ingesting DMAE led to a normalization of brain wave activity.[32]

- **SYNapsis (as Citrus Aurantium Extract Std. to 30% Alkaloids)(fruit)) – 100 mg**

As we discussed in the IsoSYN section, **synephrine** is a potent fat-burning ingredient that works via *beta-3 adrenergic receptor* activation.[31]

Synephrine specifically targets the beta-3 adrenoceptors in your body's *stored body fat tissue*,[31] thus initiating a *cyclic adenosine monophosphate* (cAMP) cascade in exactly the place where we want it the most: the fat we're trying to lose.[33] Again, cAMP upregulation increases the rate of fat *and* glucose burning, so there are some glycemic control benefits as well.



Synephrine, which targets the beta-3 adrenergic pathway, lessens the increase in heart rate or blood pressure found in many other stimulants.

Synephrine is becoming increasingly popular as targeting the *beta-3* adrenergic pathway seems to cause far less of a rise in heart rate or blood pressure than does activating the *beta-2 adrenergic pathway*.[31]

All these effects of synephrine add up to one important thing: *increased basal metabolic rate*, on the order of nearly *200 additional calories per day*.[22,31] Just to give you a sense of perspective on that, a caloric deficit of about *500 calories per day* is required to lose *one pound* of body fat per week. With synephrine use, you can potentially shed an extra *1400 calories of fat each week*, which adds up to about *2/5ths of a pound lost per week*.

Another benefit of synephrine is its ability to *suppress appetite*, which obviously makes restricting calories a lot easier.[31]

We love seeing ingredients backed by *randomized, double-blind, placebo-controlled studies* (RCTs), since this is the most rigorous possible study design. And, as it turns out, an RCT from 2016 found that people who took supplemental synephrine burned more fat during their workout than those who got the placebo.[34]

Another study from 2015 found that taking synephrine and caffeine *together* has synergistic effects on fat burning,[35] so we're glad to see synephrine stacked with caffeine in EMBER: Stim.

- **Dendright (Dendrobium Extract 1%) – 50 mg**

Next up is one of the most interesting ingredients we've seen in a while – an extract of ***Dendrobium nobile***, a purple *orchid* that's native to much of southeast Asia.

Chris Waldrum is welcomed back on the *PricePlow Podcast* for the long-awaited Episode 69, and this one goes *everywhere!*

Dendrobium plants have recently been identified by medical researchers as a potential source of therapeutics that could be used to treat or manage immune problems, diabetes, cataracts, neurodegeneration, liver disease, chronic inflammation, and inappropriate blood clotting. Dendrobium also seems to have broad *antimicrobial* effects, with significant inhibitory action against fungi, bacteria, viruses, and protozoa.[36]

Whenever we see an ingredient with significant benefits in so many domains of

human health, we expect to find that it's acting by some *fundamental* mechanism with far-reaching second- and third-order effects. That's exactly the case with *Dendrobium*.

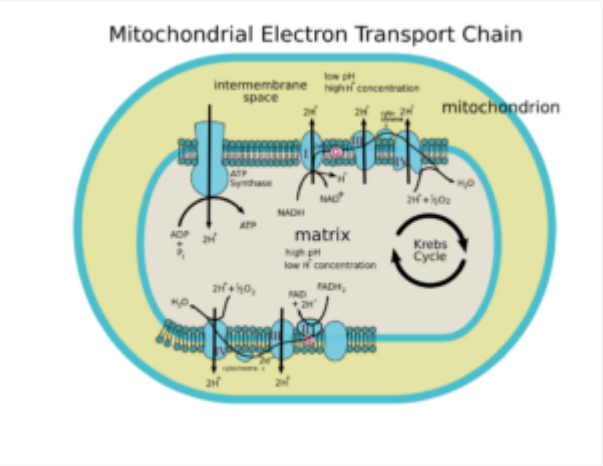
Dendrobium and gene expression

Dendrobium seems to work by improving *metabolic function* in multiple domains, and it does this by altering *gene expression* in a very big way. There's only one study on this that we know of, but it's *excellent*.

In this study, Chinese researchers administered *Dendrobium* extract to *mice* and then monitored those mice for the proliferation of mRNA associated with certain genes.[37]

Remember that mRNA (messenger RNA) is the *set of instructions*, coded by a gene, that your cells use as a template for synthesizing proteins. This is how all genes basically work: by instructing your body to create *proteins* of a certain design.

So when the mRNA associated with a particular gene *proliferates*, that basically means the gene is more *active* – it's being *expressed* more.



The Mighty Mitochondria. Responsible for the body's ATP production, and therefore your performance in the weight room.

When the study authors assessed mRNA activity in their rodent subjects, they found that *Dendrobium* had *vastly* upregulated the activity of genes that are responsible for *glucose burning, fat burning*, and most perhaps importantly, *mitochondrial biogenesis*.[37]

The mitochondrial gene in question codes a protein called *PPAR-γ coactivator 1α* (PGC1α), which was detected at significantly elevated levels in the mice treated with *Dendrobium*. PGC1α not only increases the *number* of mitochondria within an organism – it also *increases the respiratory capacity of existing mitochondria*.[37,38]

Mitochondrial health is a *huge* deal, and something we harp on here at PricePlow all the time. There's a simple reason for this: since your body uses *cellular energy* to perform all of its metabolic tasks, and mitochondria are responsible for producing all of your body's cellular energy, the number and health of your mitochondria ends up affecting the function of your entire body at the *macro* level.

Just to give you an idea of how *fundamental* mitochondrial health is to human health, it's been identified as a key predictor of *gait speed* in older adults.[39,40] Think about that – the health of all these millions-upon-millions of tiny, microscopic *organelles* in your body adds up to a significant effect on something as basic as *your walking speed*.

PGC1-α burns fat and fights *oxidative stress*

When it comes to *burning fat*, PGC1-α is important as a catalyst for the conversion of *white adipose tissue* (WAT) to *brown adipose tissue* (BAT).[41]

WAT is where your body places *long-term energy stores*, which are not readily accessible to be burned as energy. It's more of an emergency reserve that only gets tapped into when calorie intake is *extremely* low, as in famine conditions.[42]

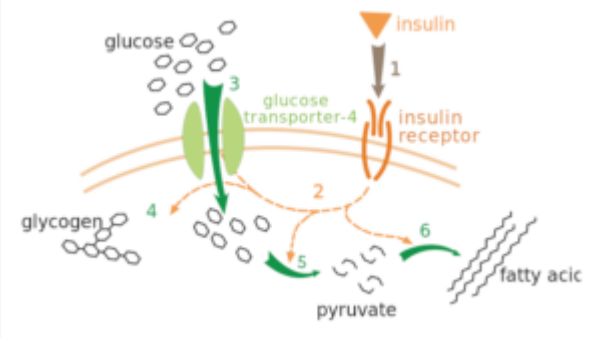
BAT, on the other hand, is the site of a process called *non-shivering thermogenesis*, in which your body burns *calories* – from both fat and glucose substrates – as *heat*.[42]

So BAT is *much* more metabolically active than WAT. Also, BAT is *constantly* burning extra energy, whereas WAT isn't really burning much at all. So when you convert *WAT into BAT*, the upshot is a significant increase in your body's *basal metabolic rate*, the number of calories it burns in one day while at rest.[43,44]

Its ability to burn *glucose* for heat, as well as fat, means that BAT can actually improve metabolic health *even in the absence of weight loss*, just by helping keep blood glucose and triglycerides under control.[45]

PGC1-α also plays an important role in *fighting reactive oxygen species* (ROS), a *type* of free radical. Since free radicals contribute to your body's burden of oxidative stress, PGC1-α basically acts as a powerful *antioxidant* in detoxifying them.[37]

Glucose Transporter 4 (GLUT4) – your body's *glucose disposal agent*



Graphic showing the action of GLUT4 is it makes energy available for your cells to use.

The *Dendrobium* extract *also* upregulated the function of a gene-encoded protein called *glucose transporter 4*, which is responsible for moving *glucose* out of the bloodstream and into your cells, where it can be consumed as useful energy.

Once that glucose is moved into your cells, *it's no longer in your bloodstream*, meaning that GLUT4 upregulation can help improve *glycemic control*, keeping your blood glucose levels within the acceptable range.[46]

This is key for *long-term fat loss and weight control*, since the insulin overproduction that's associated with chronically elevated blood glucose can, over time, push an individual into a *diabetic* and *obesogenic* state.[47]

PPARα upregulation improves *liver health*

The last thing we want to mention about *Dendrobium* is its upregulation of a protein called proliferator-activated receptor-α (PPARα), which regulates *glucose uptake by the liver*.

PPARα basically controls your liver's *fat burning* machinery. Animals whose PPARα has been deleted will spontaneously develop non-alcoholic fatty liver disease (NAFLD),[48] a progressive *fibrosis* of the liver that's driven by fat accumulation and can lead to *serious liver damage* if left untreated.

Final word about *Dendrobium* safety profile

Don't worry, it doesn't contain meth. A decade ago, dendrobium was dragged into a massive scandal by a supplement brand sold at many major retailers – it was claimed that the plant contained numerous highly-psychoactive constituents. Those claims turned out to be false – dendrobium did *not* have any such components – the dietary supplement was merely spiked in a very clever fashion.[49,50] When it comes to dendrobium, we urge readers not to throw the baby out with the bathwater, but understand that it *doesn't*

- **Rauwolfia vomitoria Root Extract (std. to 90% Rauwolscine) – 2 mg &**

Yohimbine HCl – 2 mg

Extracts of ***Rauwolfia vomitoria*** are standardized for *rauwolscine* and sometimes referred to as “alpha yohimbine,” or “alpha yo,” because they have a similar mechanism of action to that of *yohimbine*, except *stronger*.

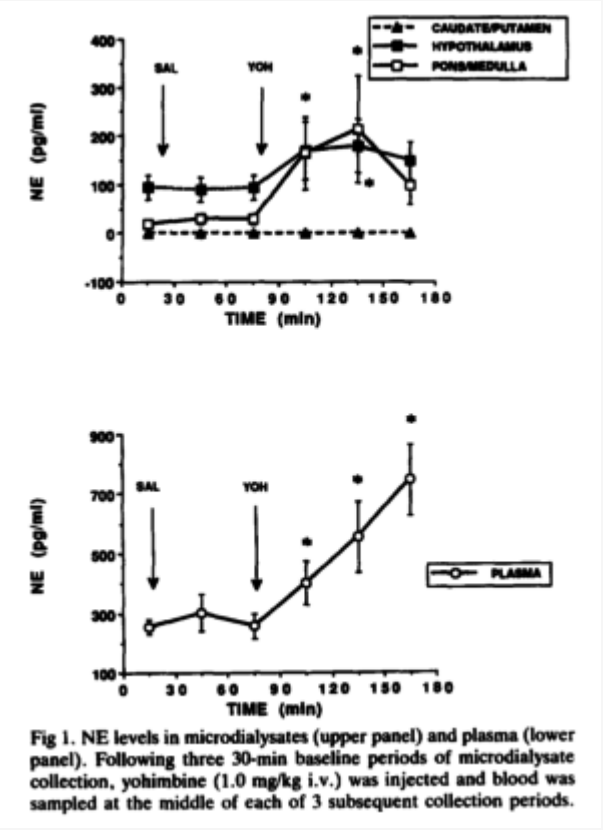


Fig 1. NE levels in microdialysates (upper panel) and plasma (lower panel). Following three 30-min baseline periods of microdialysate collection, yohimbine (1.0 mg/kg i.v.) was injected and blood was sampled at the middle of each of 3 subsequent collection periods.

Yohimbine has a dramatic effect on norepinephrine levels.

Yohimbine is an *alpha-2* adrenoceptor antagonist, whereas rauwolscine is a *beta adrenergic receptor agonist*. Both compounds work by upregulating *adrenaline* and *noradrenaline*, thus helping initiate the fight-or-flight response and, in the process, decreasing appetite,[51] *facilitating* fat *loss* and *inhibiting* fat *deposition*,[52] improving *focus*,[53] and increasing your body’s supply of *cellular energy*.[54]

Yohimbine and “alpha yo” are increasingly *paired together* by supplement manufacturers who are looking for *complementary ingredients* to stimulate the sympathetic nervous system.

Conclusion

This is a *stimulant-heavy* supplement formula. Not only does it have a *lot* of different powerful stimulants, but they’re all dosed aggressively. We occasionally see 2 milligrams of rauwolfia and 2 milligrams of alpha yo, for

example, but it’s not common for them to be stacked with a large dose of caffeine *and* a huge dose of synephrine and betaphrine.

If you can tolerate all this stuff, then this pre-workout will no doubt give you an *awesome* experience, but **user caution is strongly advised**.

Start with 1 capsule or even half a capsule (you can break them open and measure the powder) before working your way up to the full 2-capsule dose.

Inspired Nutraceuticals EMBER Premium Stimulant Fat Burner – Deals and Price Drop Alerts

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