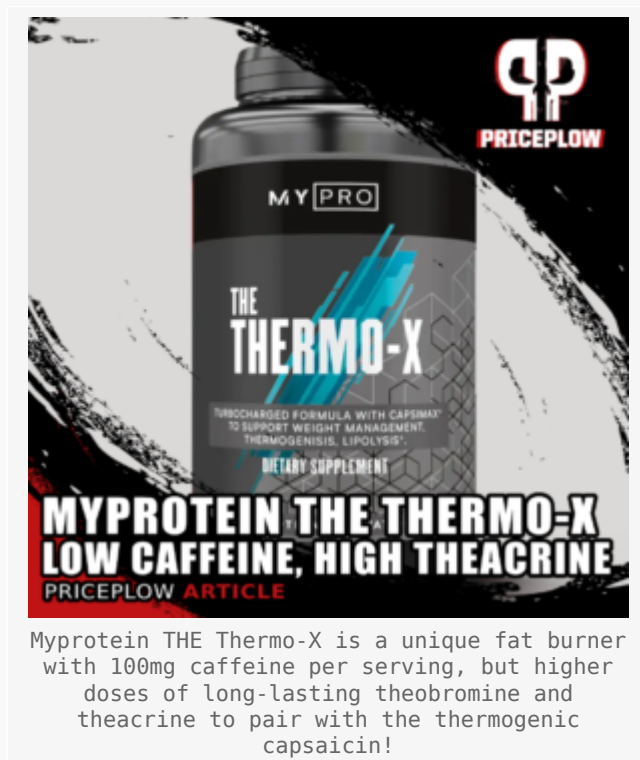


Myprotein THE Thermo-X: 100mg Caffeine Fat Burner High in Theacrine, Theobromine

written by Mike Roberto | November 8, 2022

As you can probably guess from their name, **Myprotein** specializes in *high quality protein supplements*, but in recent years they've branched out into *tons* of other product categories. This is especially true with their *Pro Range*, which has product names that begin with the word "THE" (example: *THE Whey* and *THE Pre-Workout*).



Now, with **THE Thermo-X**, Myprotein is taking a stab at one of the supplement industry's mainstays: *fat burners*.

Myprotein THE Thermo-X: A unique, lower-caffeine fat burner

At a time when the industry is moving toward *brown adipose tissue* (BAT) upregulation as the primary fat-burning strategy, Myprotein comes at you with something a little different THE Thermo-X kicks off with a huge dose of *theobromine*, a longer-lasting methylxanthine alkaloid, and pairs it with a huge long-lasting dose of *theacrine*. Then it follows those with 100 milligrams of caffeine per two-capsule serving and a bunch of *appetite-suppressant* ingredients.

So right off the bat, we can tell you that the stim-blend in here is going to be far different than what you're used to with the average fat burner.

Before we talk about how it works, let's check the PricePLOW news and deals:

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Ingredients

In a single *2-capsule serving* of **THE Thermo-X** from **Myprotein**, you get the following:

- **Theobromine – 200 mg**

| Serving Size – 2 Capsules | | |
|--|-------------|----------------|
| Servings Per Container – 45 | | |
| Supplement Facts | | |
| | Per Serving | % Daily Value* |
| Theobromine | 200mg | † |
| Theacrine | 125mg | † |
| Caffeine Anhydrous | 100mg | † |
| AlphaSize® Alpha-Glycerol Phophoryl Choline | 100mg | † |
| Rhodiola Rose (Rhodiola rosea L.) (Root) Extract (1% Rosavins, 3% Salidroside) | 65mg | † |
| Capsicum annum (2% Capsaicinoids) | 50mg | † |
| Griffonia simplicifolia (Seed) Extract (L-5-Hydroxytryptophan) | 50mg | † |
| BioPerine® (Black Pepper Fruit Extract)(Piper nigrum) | 2.5mg | † |

Theobromine is a *methylxanthine alkaloid* found in tea, coffee, and chocolate, and more.[1]

Much like its close cousin, *caffeine*, theobromine inhibits *phosphodiesterase*, an enzyme responsible for breaking down *cyclic adenosine monophosphate* (cAMP), a second messenger hormone that tells your cells to burn glucose and fatty acids for energy.[2]

Theobromine can fight *fatigue* by acting as an antagonist for *adenosine*,[3] a nucleotide that builds up in your brain during the waking state.

Elevated cAMP levels stimulate the expression of a protein called *peroxisome proliferator-activated receptor-γ coactivator* (PGC-1α).[4] This helps drive a process called *fat browning*, in which white adipose tissue (WAT) is literally *colored brown* by the proliferation of new mitochondria.

When this process of mitochondrial biogenesis goes on long enough in WAT for the change in appearance to be palpable, we actually refer to it as *brown adipose tissue* (BAT). For anyone looking to burn fat, BAT is a *great* metabolic asset to have because it's the site where a process called *non-shivering thermogenesis* (NST) occurs – when extra calories are burned and converted to *heat*.

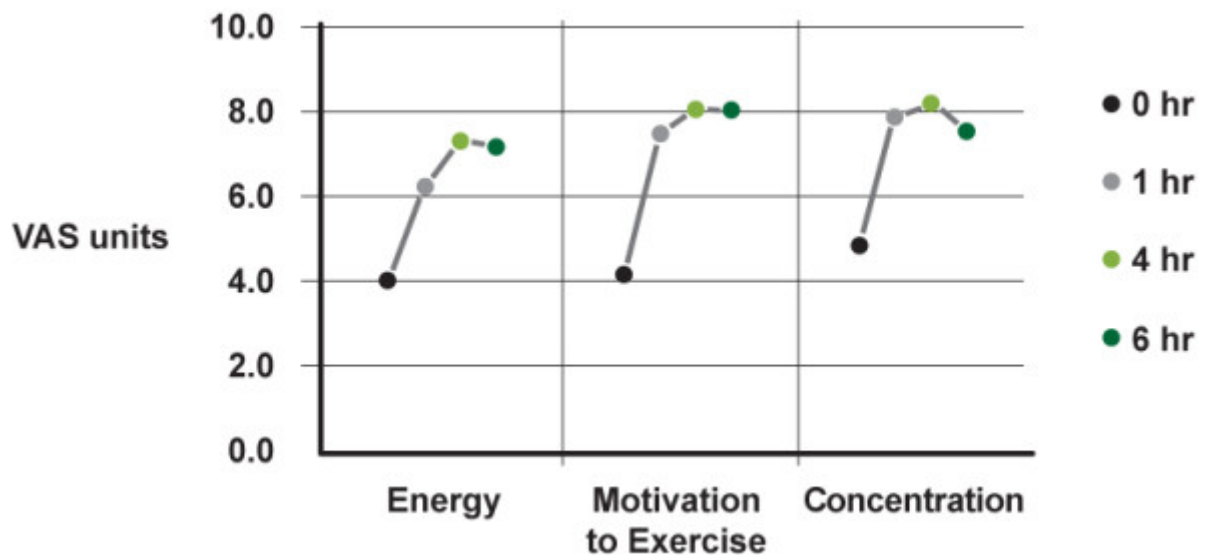
The ability to convert WAT to BAT is why theobromine is considered a thermogenic substance.[5] It's capable of significantly upregulating thermogenesis and, hence, increasing a person's daily caloric expenditure.

Ingredients like this really put the *thermo* in Thermo-X.

- **Theacrine (as TeaCrine) – 125 mg**

Next we have another *caffeine-like xanthine alkaloid*, in the form of **theacrine**.

Similar to caffeine (and theobromine), *theacrine* can increase both mental and physical energy[6] by inhibiting phosphodiesterase.[7]



Want longer-lasting energy? Here it is. Effect Size of 200 mg dose of Teacrine over course of 7-day repeated dose study relative to baseline on: Energy: 0.63, Motivation to Exercise: 0.58, Concentration: 0.6

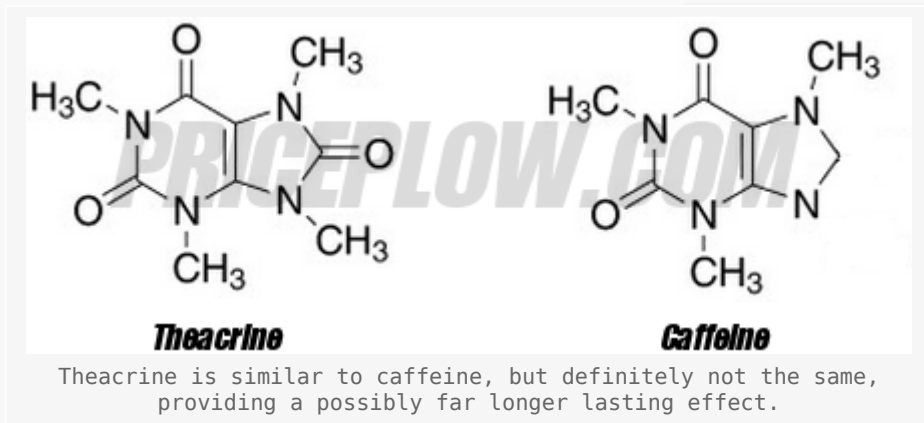
Theacrine helps fight *feelings of fatigue* by blocking the action of adenosine at the receptor level.[8] It also upregulates dopamine function by stimulating dopaminergic receptors.[9] Both of these effects can help increase motivation and focus while adhering to a dietary or exercise regimen.

Another key similarity between theacrine and the other xanthines is its ability to drive *thermogenesis*, thus increasing your daily caloric expenditure.[10]

• Caffeine anhydrous – 100 mg

As the most pervasively used *legal* psychoactive drug in the world, **caffeine** really needs no introduction. What's interesting here is the dose – just *50 milligrams per capsule*, really allowing you to titrate your caffeine intake with THE Thermo-X.

Caffeine is capable of crossing the *brain-blood barrier*, which is what gives it the ability to substantially affect mood, fatigue, and mental and athletic performance.[11] And of course, like its cousins theobromine and theacrine, caffeine fights feelings of fatigue by antagonizing *adenosine*,[12] which is why coffee drinkers the world over reach for that morning cup first thing after waking.



Caffeine gets a lot of attention for its anti-fatigue effects, but just like theobromine and theacrine, it also has a beneficial effect on cellular energy production. Its mechanism of action is that, common to the xanthines as a class, it inhibits phosphodiesterase, thus elevating cyclic adenosine monophosphate (cAMP) levels.[13,14]

As we said earlier, cAMP is a metabolic master switch, and turning it up means you'll burn more calories in a day.[15] Caffeine's effect on cAMP makes it a particularly good fat-burning compound, and it has been shown to increase the body's rate of fat burning by as much as 50%.[16]

Caffeine's ability to upregulate cellular energy production makes it a great *ergogenic aid*, capable of increasing several dimensions of athletic performance, including strength, speed, and endurance.[17] What makes caffeine (and the other methylxanthines) great for fat-burner formulas is its effect on the *brain* – it increases attentiveness,[18,19] alertness,[19] reaction speeds,[18] and working memory.[20]

Nootropic benefits aren't something most people think about in the context of a fat-burner supplement, but we think supporting mental function is important. When you're dieting to lose weight, your mental status can often *feel* impaired, so anything that helps you stay in peak condition *mentally* can ultimately improve adherence and maximize your chance of body-recomposition success.

- **AlphaSize 50% Alpha-Glycerolphosphorylcholine – 100 mg**

Alpha-glycerolphosphorylcholine, fortunately abbreviated as **alpha GPC**, is a uniquely effective form of the essential B vitamin, choline.

Choline is important as a building block for your cells' phospholipid *bilayer membranes*, the fatty envelopes that surround and enclose the interior of all your body's cells. These membranes are *crucial* for cellular health and function – they act like *borders* for your cells, keeping nutrients in while protecting organelles from pathogenic or toxic substances in your

bloodstream. [21]



Choline is also a key precursor to a neurotransmitter called *acetylcholine*, which drives the process of *memory consolidation* by facilitating communication between neurons. [22]

The more choline you give your body, the more *acetylcholine* it can produce, which ultimately leads to improved cognitive performance. Key mental abilities like memory, learning, attention, alertness, and even *psychomotor skills* like balance and coordination can benefit from supplemental choline. [23,24]

We're fans of *alpha GPC*, among other forms of choline, owing to its exceptional bioavailability and ability to cross the blood-brain barrier. [25] However, the dose isn't massive here, and it won't contribute to a ton of your day's worth of choline.

A potential *stackable* fat burner!

If you're a regular user of *Myprotein THE Pre-Workout* (which is also low-caffeine at 150 milligrams per day), you'll also get a pretty good shot of choline inside, so the two could make a very solid stack. Normally we don't recommend combining stim-based fat burners with stim-based pre-workouts, but in this case, most athletes *can* handle the total caffeine load of one serving of each!

- ***Rhodiola rosea* (*Rhodiola rosea* L.) (Root) Extract (1% Rosavins, 3%**

Salidroside) – 65 mg

Rhodiola is often touted as an *anti-stress supplement*, but did you know it has potent *weight-loss* effects as well?

First of all, we should note that there's actually quite a bit of overlap between combating the effects of *chronic stress* and reversing or preventing undue weight gain – high levels of *cortisol*, the principal mammalian stress hormone, have been shown in animal and human studies alike to increase an individual's *risk* of obesity.[26,27]



Rhodiola: Our favorite feel-good herb with some additional workout boosting properties, thanks to the *salidroside* inside. Image courtesy Wikimedia

Since *Rhodiola* extracts have been shown to *blunt* the rise in cortisol that usually follows stressful events,[28,29] *Rhodiola* should, *in theory*, help discourage obesity by preventing the hypercortisolism that can lead to obesity.

***Rhodiola's* anti-obesogenic effects**

However, *Rhodiola* can also fight obesity *directly*: Extracts of this plant have been shown to *inhibit the growth of new fat cells* (a process called *adipogenesis*),[30] as well as increase your body's rate of *lipolysis*, which is a fancy word for *fat burning*. [30]

Rhodiola also improves *glucose tolerance* and *insulin sensitivity*,[31] which, as most of us know by how, is a *huge* factor in metabolic health and, in the long run, body composition.

It also can help *suppress appetite* by upregulating an *orexigenic* compound

called *peptide Y*. [25,32] This is obviously favorable for weight loss.

Rosavins vs. Salidroside



The study we cited on *Rhodiola's* ability to *inhibit adipogenesis* and *upregulate lipolysis* takes pains to point out that the effects of *Rhodiola* can be mostly attributed to *one* of its bioactive constituents – namely, the *salidroside* the occur naturally in the *Rhodiola* plant.

There are a few different kinds of *Rhodiola* extract on the market. Sometimes they're sourced from different *species* of *Rhodiola*, other times they're standardized for different bioactive constituents.

In general, we like seeing *high-salidroside* extracts of *Rhodiola* because the salidroside seem to confer more benefits than the rosavins. [21,22]

And fortunately for us, we have a fairly high-salidroside extract in THE

Thermo-X – 3% by weight. That's good news because in the study we cited, a 3% *salidroside extract of Rhodiola* was the one shown to be most effective at inhibiting lipogenesis and upregulating lipolysis!

Other benefits of salidroside

Salidroside can also:

- Upregulate *long-term potentiation* (LTP), the neurological process behind memory consolidation[24]
- Upregulate *autophagy* by acting on mTOR[25]
- Increase *cellular oxygen uptake*[33]
- Increase the expression of *catecholamine* neurotransmitters, like dopamine and adrenaline[34]
- Inhibit *monoamine oxidase*,[35] the enzyme responsible for degrading neurotransmitters
- Improve cognitive performance[36]
- Reduce stress and anxiety[37]
- Improve mood[37]
- Mitigate depressive symptoms[38]
- Decrease physical and mental fatigue[39,40]
- Increase athletic performance[41]

Although the benefits on this list might not be *directly* related to fat burning, it's pretty easy to see how *most* of these would be helpful while adhering to a strict diet and exercise regimen. While we wish the dose were greater, at least there's some good stuff standardized here.

• Capsicum annuum (2% Capsaicinoids) – 50 mg

Cayenne pepper is the colloquial name for the pepper plant *Capsicum annuum*.

The main bioactive constituents of this pepper, *capsaicin* and related *capsaicinoids*, have been known to supplement formulators and consumers for *decades* as potent *fat-burning compounds*, thanks to their *thermogenic* effects.[42]



Capsaicinoids have also been shown to *suppress appetite*, [43] which, again, is pretty obviously a useful thing for anyone who's trying to slim down.

An extract with 2% capsaicinoids, dosed at 50 milligrams, gives us *1 milligram of capsaicinoids per 2-capsule serving*, which is only *half* the minimum effective dose of *2 milligram capsaicinoids* for weight management. [44] So, in order to get the most out of this particular ingredient, we recommend **double-dosing the product** by taking 4 capsules per 24-hour period. According to Myprotein's website, that's the *maximum* recommended dose of THE Thermo-X.

Capsaicin can also *decrease pain sensitivity*, which *could* help you push yourself harder in the gym. [45]

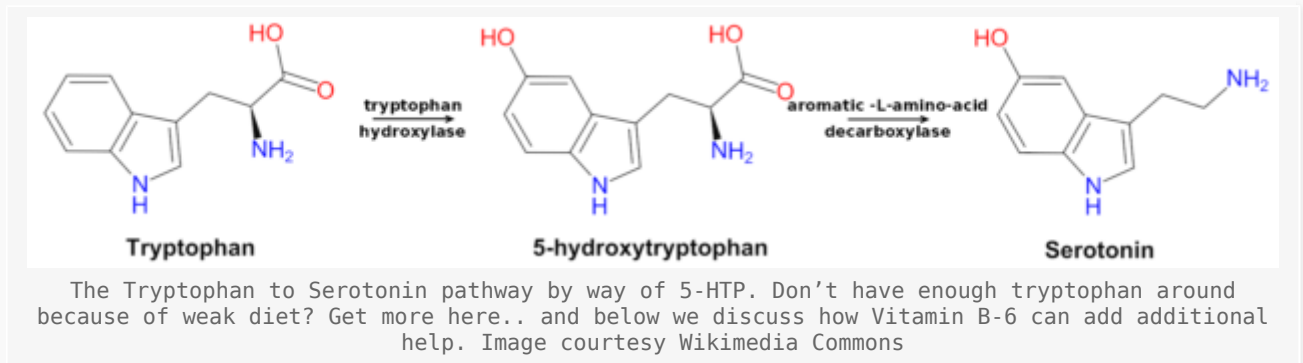
Note that in some individuals, capsaicin can increase blood pressure and heart rate, [42] which is probably one of the reasons why Myprotein recommends starting with *1 capsule* of THE Thermo-X and working your way up to the full dose, whether that ends up being 2 or 4 capsules. As always, talk to your doctor before starting a new diet or supplementation regimen.

- **Griffonia simplicifolia (Seed) Extract (L-5-Hydroxytryptophan) – 50 mg**

L-5-Hydroxytryptophan, or **5-HTP**, is a *serotonin precursor* extracted from the *Griffonia simplicifolia* plant.

Serotonin is a neurotransmitter that's responsible for helping regulate *mood*

and feelings of happiness. But since it's also important for *appetite regulation*, [46] managing serotonin levels is relevant to the process of losing weight.



It's been shown that 5-HTP supplementation can reduce cravings, [47] which are a *huge* problem for most dieters, and can *increase feelings of satiety* following a meal. [48-51]

As we discussed above, *stress hormones* can increase a person's risk of unwanted fat gain. [26,27] As it turns out, so can *sleep deprivation*, or any other kind of sleep disturbance. [52,53]

Since 5-HTP is commonly taken as an *anti-stress* supplement that improves sleep quality, [54,55] it's not much of a theoretical leap to say that 5-HTP can probably encourage healthy body composition by those mechanisms.

Other studies have found that 5-HTP supplementation can help dieters make healthier choices, [50] and improve adherence to dietary prescriptions. [51]

• BioPerine – 2.5 mg

BioPerine is a *piperine* extract sourced from *black pepper*. It's usually included as a *bioavailability enhancer* since it improves the intestinal transport of whatever other ingredients it's stacked with.

Piperine, a powerful antioxidant alkaloid, [56] does this by inhibiting stomach enzymes that usually break down ingredients before they can reach the intestines, where they're actually absorbed into the bloodstream. [57]

Piperine's anti-obesity mechanisms



BioPerine is the trusted, trademarked form of black pepper extract that promises 95% or greater *piperine*, the part of black pepper with all the activity!

Piperine also increases the expression of a protein called *glucose transporter 4* (GLUT4), which causes your muscle cells to take up glucose. This helps keep blood glucose levels under control, thus leading to long-term improvements in overall metabolic health.

In *mice*, GLUT4 upregulation has been shown to even *reverse insulin resistance and diabetes*. [58]

Piperine also improves *insulin* sensitivity while removing adipose tissue from the liver. [59]

This is important since the *accumulation* of adipose tissue in the liver can lead to a condition called *non-alcoholic fatty liver disease* (NAFLD), which is closely linked to metabolic syndrome, diabetes, and obesity. [60]

Piperine can also increase the number of calories your body burns per day by upregulating a process called *non-shivering thermogenesis*, in which your body burns glucose and fatty acids off as heat. [61]

Conclusion



On one hand, THE Thermo-X's formula is pretty straightforward – lots of work is done by *appetite-suppressant* ingredients, which obviously make it easier to eat less. On the other hand, it's very unique – higher doses of both theobromine and theacrine and lower doses of caffeine will lead to a *long-lasting* but *lower-stim* effect.

But with lower amounts of caffeine in both this product *and* THE Pre-Workout, many users *will* be able to stack the fat burner and pre-workout from The Pro Range – something that is almost *never* a possibility from brands! So it's pretty cool how this series turned out.

But also, there are a lot of *anti-stress* and *sleep-promoting* ingredients in here too, which we appreciate because it's easy to overlook the crucial role that hormones and sleep play in establishing and maintaining healthy body composition.

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