

Anabolic Warfare Project JACKED: Inflammate the Muscle

written by Mike Roberto | March 30, 2022

Based in Austin, TX, *Anabolic Warfare* has been hitting the supplement industry *hard* with some incredibly aggressive muscle-building supplements.



One of the unique selling points behind this product line is the inclusion of *ecdysteroid-containing plant extracts*, bringing an exciting new body of research showing *enormous* anabolic potential. The first product in the *Project Muscle* line, *Project Hulk*, sold out in just a few days, partly because it contains *turkesterone*, perhaps the most sensational phytoecdysteroid on the market.

But if you're not looking outside of turkesterone, or want to go above and beyond in your stack, what *else* does Project Muscle have to offer?

Project Jacked: Bringing back Arachidonic Acid and more

Today we're going to take a close look at **Project Jacked**, one of the unique muscle builders in Project Muscle. This one's incredibly exciting because it contains *arachidonic acid*, a pro-inflammatory muscle-building ingredient we haven't seen for *far* too long. Additionally, we have a *different* source of ecdysteroids in *Rhaponticum carthamoides*.

We've never seen a muscle builder like this, so below, we take the deep dive. Before getting into the science, take a moment to sign up for PricePLOW's Anabolic Warfare news alerts and check prices:

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Project Jacked Ingredients

In a single *three capsule* serving of Project Jacked from Anabolic Warfare, you get the following:

- **Creatine Hydrochloride – 1000 mg**

There's no probably no supplement on the market that's been studied as much as **creatine** – nor is there one with more evidentiary support for its use.

Project Jacked		
Supplement Facts		
Serving Size: 3 Capsules		
Servings per Container: 30		
	Amount Per Serving	%DV
Creatine Hydrochloride	1g	**
Arachidonic Acid	500mg	**
ElevATP® Apple & Peat Polyphenols (Malus domestica)	150mg	**
Maral Root Extract (Rhaponticum carthamoides)	100mg	**
Nettle Root Extract (3,4 Divanillyltetrahydrofuran)(Urtica fissa)	100mg	**
Dehydroepiandrosterone (DHEA)	100mg	**
7-Keto DHEA	50mg	**
BioPerine® Black Pepper Fruit Extract (95% Piperine)(Piper nigrum)	5mg	**
**Daily Value Not Established		
Other Ingredients: Gelatin (capsules), Rice Flour, Silicon Dioxide, Magnesium Stearate.		
BioPerine® is a registered trademark of Sabinsa Corporation.		

Is Project Jacked the most unique muscle-building formula we've seen? We think so!

Highly effective and well tolerated, creatine helps your body synthesize more *adenosine triphosphate* (ATP), [1-5] the basic unit of metabolic energy in the human body. This comes with a *ton* of downstream benefits, including:

- Increased power output [6,7]
- Lean mass gains [8-13]
- Faster sprints [14-16]
- Improved hydration status [17]
- Decreased fatigue [18-21]
- Increased sense of well-being [22-25]
- Cognitive improvements (in vegans and vegetarians) [26,27]
- Improved testosterone blood levels [28-32]
- Greater bone density [33]

In addition to the couple dozen studies we've cited in this laundry list of creatine's benefits, there are literally hundreds of similar studies and meta-analyses in the research literature. Bottom line: **creatine is a supplement that anyone could recommend with a straight face.**

So how much creatine do we need? Creatine occurs naturally in food, so there's a *rough* physiological answer to this question: the average intake of creatine from diet according to the famous National Health and Nutrition Examination Survey (NHANES) is 0.54 grams per day, but **some Americans get over 3 grams of creatine per day just from food.** So a 1,000 mg (1 gram) dose is a physiologically appropriate dose for some – but likely not *low* meat dieters.

The standard and most studied creatine dose is about 3 to 5 grams per day – so if you take Project Jacked, you may wish to add in some additional creatine... **or you could just eat some *steak*** (we're a big fan of this approach).

Creatine hydrochloride?

Table 1. The general characteristics of the groups at baseline in mean values and standard deviation of body weight, body composition, and upper and lower limb strength.

Variables	Placebo (n = 6)	HCL 1.5 g (n = 7)	HCL 5.0 g (n = 6)	Monohydrate (n = 8)	p-value
Weight (Kg)	69.67 ± 11.3	71.14 ± 15.4	67.33 ± 13.1	71.13 ± 13.1	0.954
Fat mass (Kg)	13.67 ± 7.8	13.87 ± 5.8	14.50 ± 8.0	16.375 ± 4.8	0.895
Fat mass (%)	21.47 ± 9.3	19.57 ± 7.8	20.67 ± 7.2	22.88 ± 3.7	0.832
Fat-free mass (Kg)	53.667 ± 9.0	56.429 ± 13.2	52.837 ± 8.9	53.750 ± 9.5	0.900
Leg Press (Kg)	260.00 ± 118.6	274.29 ± 57.1	285.00 ± 88.3	264.38 ± 83.8	0.899
Bench Press (Kg)	61.33 ± 26.1	72.43 ± 25.7	83.67 ± 40.7	71.88 ± 28.9	0.605

Table 2. The changes in the values of weight, body composition and strength variables after 4 weeks of training and supplementation in the CG, HCL-1, HCL-2 and CMG group.

Variables	Placebo (n = 6)		HCL 1.5 g (n = 7)		HCL 5.0 g (n = 6)		Monohydrate (n = 8)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Weight (Kg)	69.7 ± 11.5	69.8 ± 11.5	71.1 ± 15.4	71.1 ± 16.3	67.3 ± 13.1	67.67 ± 14.4	71.1 ± 13.1	71.9 ± 12.5
Fat mass (Kg)	13.2 ± 7.8	14.3 ± 8.0	13.8 ± 5.8	12.7 ± 5.6 [*]	14.5 ± 8.0	13.3 ± 8.3 [*]	16.4 ± 4.8	15.6 ± 3.7
Fat mass (%)	21.7 ± 9.3	20.5 ± 10	19.6 ± 7.8	18.0 ± 7.9 [*]	20.7 ± 7.2	18.7 ± 8.2	22.9 ± 3.7	21.7 ± 2.9
Fat-free mass (Kg)	53.7 ± 9.0	54.8 ± 9.5	56.4 ± 13.2	57.4 ± 13.9	52.2 ± 8.9	53.8 ± 8.9 [*]	53.7 ± 9.5	55.4 ± 9.9
Leg Press (Kg)	260 ± 118.6	293.3 ± 111.5 [*]	274.3 ± 57.1	305.7 ± 59.4 [*]	285.0 ± 88.3	318.3 ± 86.8 ^{**}	264.4 ± 83.8	299.3 ± 90.9 [*]
Bench Press (Kg)	61.3 ± 26.1	64.5 ± 27	72.4 ± 25.7	76.0 ± 25.0 [*]	83.7 ± 40.7	90.5 ± 37.0	71.9 ± 29.9	78.7 ± 33.4

*p < 0.05; **p < 0.001.

Table 3. The values of Pearson correlation between upper and lower limb strength (1RM) and body composition in recreational weightlifters and different groups of creatine supplementation.

Independent variables	Placebo (n = 6)	HCL 1.5 g (n = 7)	HCL 5.0 g (n = 6)	Monohydrate (n = 8)
	Relationship with ULS (Pearson Correlation [r])			
Weight (Kg)	-0.34	-0.06	0.15	0.18
FM (Kg)	0.64	-0.14	-0.93 [*]	-0.68
FFM (Kg)	-0.20	0.21	0.93 [*]	0.27
Relationship with LLS (Pearson Correlation [r])				
Weight (Kg)	0.00	-0.43	-0.06	0.55
FM (Kg)	0.00	0.43	-0.64	0.28
FFM (Kg)	0.57	-0.39	0.64	-0.15

*p < 0.05; FM = fat mass; FFM = fat free mass; ULS = upper limb strength; LLS = lower limb strength.

One study showed that Creatine HCL works just as well as monohydrate at the same dose![34]

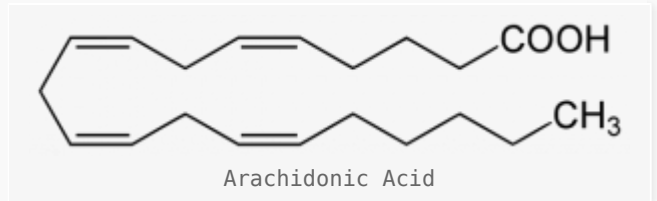
The avid supplement consumers among us have probably noted the appearance of creatine *hydrochloride* instead of creatine *monohydrate*, the latter of which is the more commonly used form. The reason for this is that some believe the hydrochloride form to be more bioavailable, and hence more effective, than the monohydrate form. In *animals*, this actually seems to be the case, where the hydrochloride form *has* been shown to have oral bioavailability.[35]

One study published in 2015 compared creatine hydrochloride against monohydrate in humans, and found that it worked as well or better than monohydrate at 5 grams per day,[34] which is a study always worth considering, even if we're at a lower dose.

At the end of the day, though, it's likely splitting hairs. We'll generally take any form of creatine – a direct comparison between the two forms showed no difference in humans.[36] No worries though – creatine HCL is plenty effective and many report less GI issues from it, so some will be very happy to see it. You'll still get all the usual benefits of creatine monohydrate.

• Arachidonic Acid – 500 mg

We don't get to write about **arachidonic acid (ARA)** very much, so we're glad to see it included here, because using this ingredient shows a good understanding of human physiology and the precise mechanisms by which we gain muscle.



ArA, an *omega-6 fatty acid*, occurs naturally in the *phospholipids* of the human body.[37] ArA comes into muscle synthesis by playing a *signaling* role – it triggers the production of molecules that regulate *inflammation*, especially the inflammation that follows a bout of intense exercise.[38] So taking ArA basically increases the amount of exercise-induced inflammation.

“But wait,” you might be asking, “*isn’t inflammation bad?*”

Yes, *some* kinds of inflammation are bad – specifically, chronic (unremitting) inflammation. But *acute* inflammation is a naturalistic response to stimuli that warrant it. Exercise is one example, and the *immune response* is another.

In fact, inflammation is so important for gaining muscle that the use of non-steroidal anti-inflammatory drugs (NSAIDs) around the time of exercise can actually *impair* the growth of muscle.[39,40] So clearly, we don’t want to get rid of *all* inflammation. As with many things in life, we should strive for a happy medium between too little and too much.

How can we get a bit more inflammation – but at the right time? That’s the perfect use for a *supplement*.

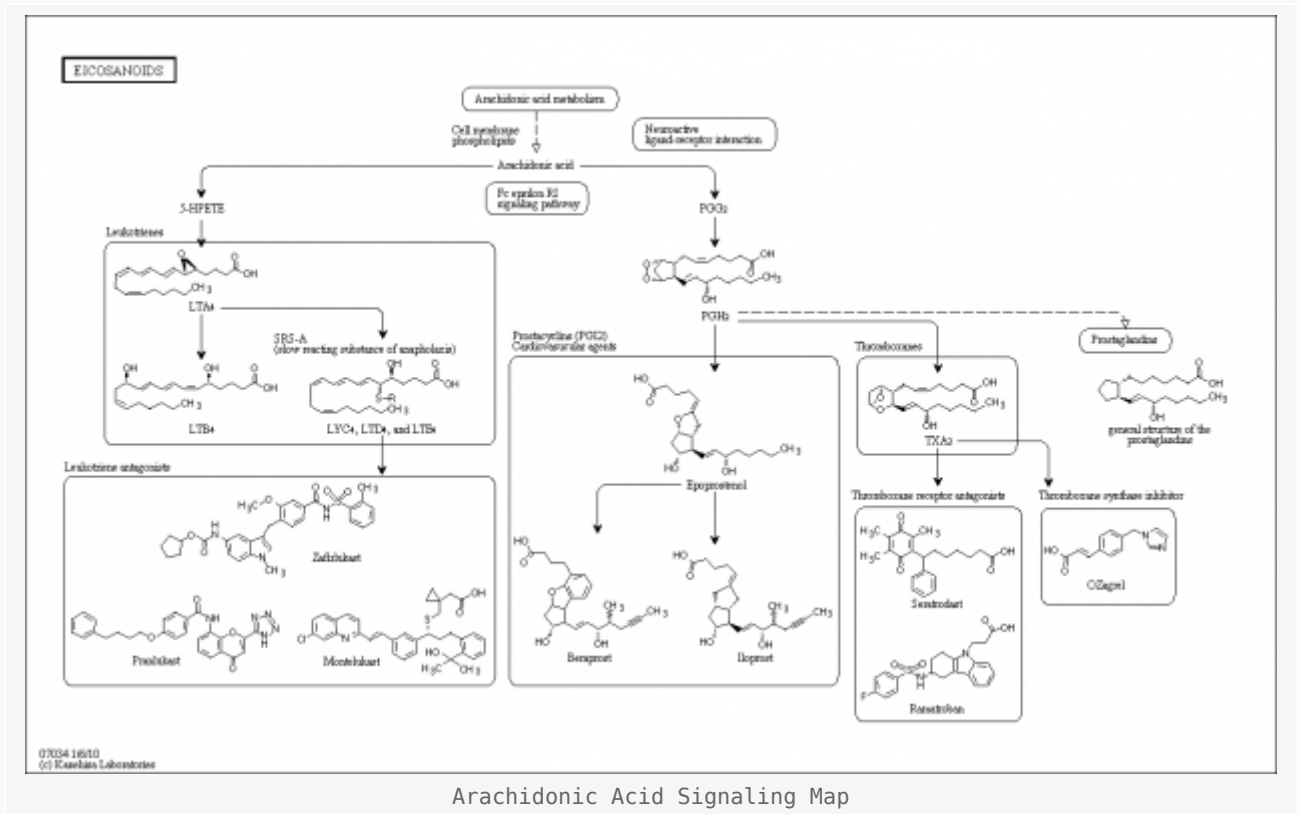
Arachidonic Acid Mechanisms of Action

ArA helps produce *eicosanoids*,[41] a group of signaling molecules that includes prostaglandins (these are the primary target of NSAIDs), thromboxanes, lipoxins, and leukotrienes.

The category we care most about is *prostaglandins*. The prostaglandins PGE2 and PGF2a are necessary for *muscle protein synthesis* to occur in response to exercise.[42,43] So to maximize muscle gains, we want PGE2 and PGF2a levels to be as high as possible.

People who take ArA as part of a weightlifting program can significantly increase the expression of PGE2 and PGF2a,[44] leading to an increased amount of muscle protein synthesis.[45,46] This leads to bigger muscles overall.

Effectively, ArA is a clever hack to trick your muscles into growing more!



Arachidonic Acid Signaling Map

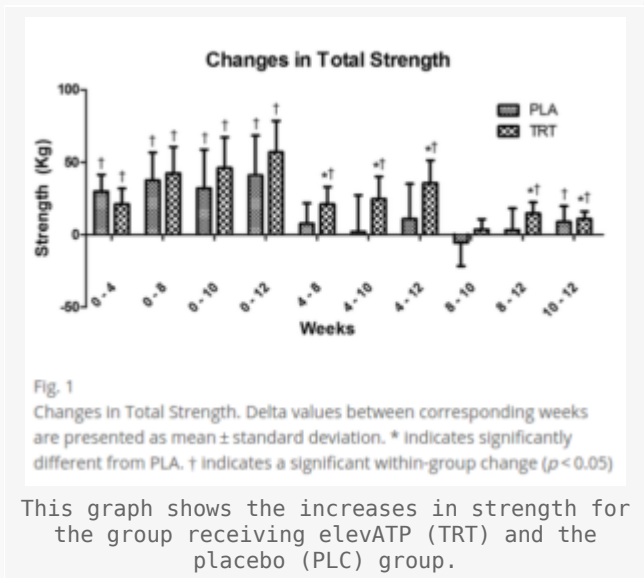
A Note about Arachidonic Acid

Because arachidonic acid works by increasing inflammation, it should be taken away from powerful *anti-inflammatory* compounds like fish oil, curcumin, and especially NSAIDs like aspirin and ibuprofen.

Finally, due to this ingredient, we believe that **Project Jacked should be near your workout**. This is the time to promote pro-inflammatory muscle protein synthesis. Some will argue for pre- or post-workout use specifically, so test what specifically may work best for you.

- **ElevATP (Apple & Peat Polyphenols) – 150 mg**

ElevATP is a trademarked mixture of extracts from *peat moss* and *apples*.



Preliminary studies have shown that ElevATP can *increase extracellular ATP levels*, [47] which, as we know from our above discussion of creatine, is *crucial* for optimizing a ton of metabolic processes. ATP is the basic unit of cellular energy, so of course, not having enough is a pretty terrible thing in terms of health and performance, and having *more* is almost always better. We deplete ATP during exercise, so raising ATP levels through supplementation can theoretically help blunt some of the negative effects associated with exercise.

There has been at least one study that specifically examines whether this theoretical benefit translates into real-world performance gains: and the answer appears to be yes. The study, published in 2016, found that supplementation with 150 milligrams of ElevATP daily for eight weeks increased subjects' one rep max for squat and deadlift, compared to a placebo control. [48] There were also increases in vertical jump velocity and power. [48]

At just a 150 milligram clinical dose, ElevATP makes great sense in a capsule muscle building supplement, and pairs very well with the creatine also inside.

- **Maral Root Extract (*Rhaponticum Carthamoides*) – 100 mg**

Sourced from the plant *Rhaponticum carthamoides*, **maral root extract** is a rich source of *phytoecdysteroids*, testosterone-like phytochemicals that have anabolic effects.

Rhaponticum extracts are standardized for *20-hydroxyecdysone*, also known as *ecdysterone*. Of all identified phytoecdysteroids, *ecdysterone* is the most studied by far.

Because ecdysterone does *not* affect the androgen system, you can use it to

increase anabolism without worrying the hypothalamic-pituitary mediated negative feedback on testosterone production that's typically associated with anabolic steroid use.



One *in vivo* study found that ecdysterone increased subjects' muscle mass by about 7% compared to a placebo, while decreasing fat mass by a significant 10%.[49] *In vitro* studies conducted with animal cells have found that ecdysterone is capable of increasing the diameter of rats' muscle fibers.[39]

Another human study in collegiate weightlifters found that ecdysterone supplementation significantly increased their muscle and strength gains compared to a placebo.[50]

Whole Plant Extracts vs. Isolated Ecdysteroids

So if ecdysterone is so great, why not just use isolated ecdysterone? The simple answer is that according to the research literature, whole-plant extracts typically contain a *variety* of ecdysteroids, which are more effective in combination than any particular one on its own.[40]

Whole-plant *Rhaponticum* extracts have been studied specifically, and the evidence indicates that they can cause substantial increases in muscle mass[49] and work capacity,[51] while decreasing fat mass.[49]

There's a *lot* to write about phytoecdysteroids and ecdysterone in particular, but a full discussion beyond the scope of this article. If you're interested in reading our detailed review of phytoecdysteroid research, check out our article *Turkesterone and Phytoecdysteroids: Mother Nature's Anabolic Warfare*. After reading that, you may just consider stacking Project Jacked with another

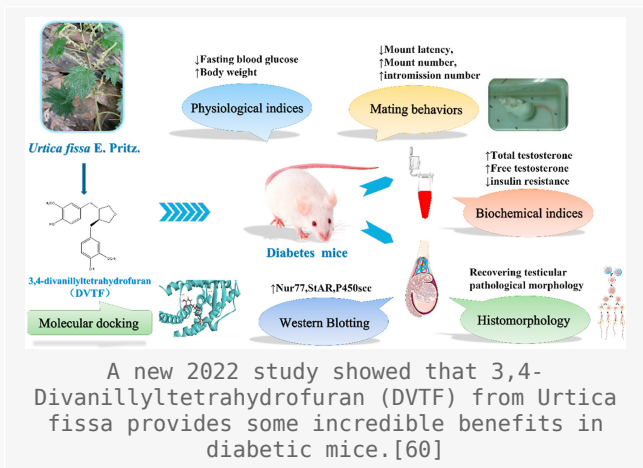
supplement or two from Anabolic Warfare!

- **Nettle Root Extract (3,4 Divanillyltetrahydrofuran) (*Urtica fissa*) – 100 mg**

Plants from the **Urtica** family, commonly known as *nettle*, have been used for thousands of years in traditional medicine as anti-inflammatory drugs.[52] Among its other uses, preparations of the *Urtica* family have been shown to act as *5-alpha-reductase inhibitors*, thus preventing the conversion of testosterone to dihydrotestosterone (DHT).[53] This keeps *total testosterone levels* higher, while simultaneously reducing some of the negative effects associated with high DHT, such as prostate enlargement[53,54] and hair loss.

Urtica plants have been shown to lower the binding affinity of *human sex hormone-binding globuline* (SHBG),[55-57] which prefers to bind testosterone over estrogen.[58,59] So by interfering with the action of SHBG, we can effectively raise our bodies' levels of *free* or unbound testosterone, which is the biologically active form of the hormone.

3,4-Divanillyltetrahydrofuran (DVTHF)



Although *Urtica* extracts are usually taken from the *Urtica dioica* plant, this extract from *Urtica fissa* is standardized for **3,4-Divanillyltetrahydrofuran (DVTHF)**.

DVTHF matters because according to the research literature, "*the affinity of (-)-3,4-divanillyltetrahydrofuran [for SHBG] was outstandingly high.*"[56] Its affinity was so high that DVTHF was able to *completely* prevent DHT from binding to SHBG.[56] They conclude by saying "*The outstanding affinity of 3,4-divanillyltetrahydrofuran is a further proof for the physiological effectiveness of this class of compounds.*"[56]

A study recently published in 2022 showed that when 3,4-

divanillyltetrahydrofuran from *Urtica fissa* (exactly what we have here) was given to diabetic mice, not only did body weight and fasting blood glucose go down, but mating behavior and both free and total testosterone went up![60]

So, this *Rhaponticum* extract with its strong ability to interfere with the action of SHBG means *more free testosterone* for you – and with it, all the effects typically associated with high testosterone, like energy, drive, stamina, and *gains*.

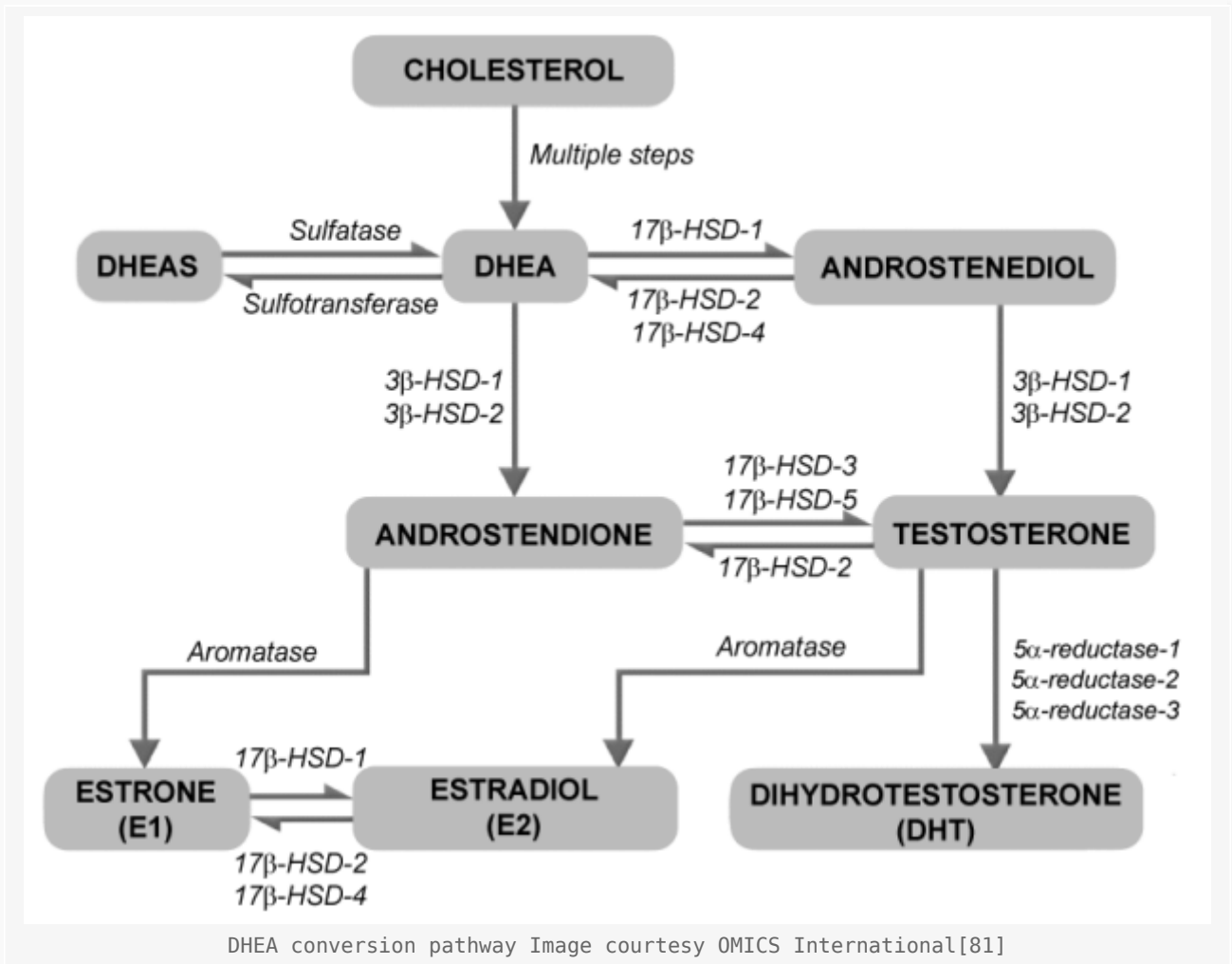
- **Dehydroepiandrosterone (DHEA) – 100 mg**

In a world where heavy-hitter testosterone gets all the glory, **dehydroepiandrosterone** (DHEA) is easily overlooked. But make no mistake: DHEA, a precursor to better-known steroid hormones like *testosterone* and *estrogen*, [61] is a powerful compound in its own right. In fact, it has repeatedly been described in the research literature as “*the fountain of youth*”. [61-64]

DHEA has received a lot of attention from anti-aging researchers in recent years because of its ability to produce the hallmarks of youthfulness, and because unfortunately, DHEA production declines by as much as 80% after the age of 30. [65-67]

The way DHEA makes us more “youthful” is by regulating the synthesis and action of *cortisol*, the body’s main glucocorticoid stress hormone.

DHEA (even low-dose DHEA) does this by *inhibiting* the action of *11β-HSD1*, the enzyme that synthesizes cortisol, while *enhancing* the action of *11β-HSD2*, the enzyme that *degrades* (breaks down) cortisol. [68-71]



The overall effect is to *decrease* our body's blood levels of cortisol.

Additionally, DHEA seems to have effects similar to those of dihydrotestosterone (DHT), which is arguably the most androgenic form of testosterone and responsible for most of the androgen system's "masculinizing" effects[72] as well as a significant degree of anabolism.[72]

Finally, whenever we are taking *testosterone boosters*, we want to do something to inhibit *aromatase*, the enzyme that converts testosterone to estrogen – otherwise, some of the surplus testosterone we produce will be wasted. Fortunately for us, DHEA has been shown to possess significant aromatase inhibiting activity,[73] with one study showing that DHEA reduces aromatase activity by approximately 35%.[73]

- **7-Keto DHEA – 50mg**

7-Keto DHEA is a byproduct of DHEA, with most of the benefits of DHEA itself – the difference being that 7-Keto DHEA is *not* converted into testosterone or estrogen, so the inclusion of this form really emphasizes the independent benefits of DHEA supplementation.



Instead, 7-Keto DHEA has been shown to boost metabolic rate in dieters in caloric deficits, and seems to do so by regulating cortisol.[74-76] Cortisol reduction has been shown to lead to numerous beneficial effects, including improved hormonal status, so that's likely the *real* purpose here – although we'll happily take an improved metabolic rate.

- **BioPerine Black Pepper Fruit Extract (95% Piperine) (Piper Nigrum) – 5mg**

Finally, to tie it all together, Anabolic Warfare provides some ingredient amplification using **BioPerine**, which is a black pepper extract standardized for *piperine*. This is valuable because piperine inhibits stomach enzymes that prematurely break down compounds and ingredients before they can get absorbed by the intestines,[77] effectively boosting ingredient uptake.

Piperine also increases GLUT4,[78] which is helpful because this is the transporter that moves glucose from the bloodstream and into muscle tissue. There's some added research helping to combat metabolic issues like fatty liver and insulin resistance,[79] along with some added antioxidant support.[80]

Dosage and Timing

As discussed in the arachidonic acid section above, you're going to want to put this one close to your workout and away from anti-inflammatory ingredients such

as fish oil, curcumin, and NSAIDs. Our initial thinking is to take it post-workout, but many argue for ArA to be taken pre-workout – the point is to take *advantage* of the acute inflammation generated!

Conclusion: ArA is back in Project Jacked!



Anabolic Warfare's *Project Jacked* is on the cutting edge of testosterone-boosting research. We particularly like the emphasis here on compounds that inhibit SHBG and boost *free testosterone* while providing some aromatase inhibition through the inclusion of DHEA, all while promoting muscle-building inflammation around your workout.

Because of all of these mechanisms coming together, including the ATP boosters, this could possibly be the most unique muscle building supplement on the market.

Meanwhile, phytoecdysteroids are a huge frontier in supplement research today – we predict that in 2022 and beyond, you're going to see more and more brands including extracts from phytoecdysteroid-rich plants like *Rhaponticum carthamoides*. Anabolic Warfare did that here and then some.

So far, Project Muscle is coming through in a big way. We intend to continue covering them, since there are several types of unique product in this line that you can mix and match for a custom approach and optimal results:

- Three muscle-building formulas
- Three single-ingredient muscle builders
- Three weight loss/toning formulas
- Two *hormone optimizers*

We consider Project Jacked to be one of the more advanced formulas inside, and that's why we covered it *first* in our Project Muscle series.

Stay tuned, because there's more coming:

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