

David

Hey everybody, it's David Roberts and you're listening to the MA Labs podcast. On this day, I have Dr. Martin Katz and Dr. John Gildea with me. And welcome gentlemen.

Dr. Martin Katz:

Hello.

Dr. John Gildea:

Hello.

David:

We're going to be talking about a question that we get often. We'd got it last week on a webinar and thought we'd just go ahead and share it more broadly with our community, but the difference between BrocElite and the only other stabilized sulur fin product on the market, Broq On the webinar, Eric Goldman pronounced ProQ, I think they pronounce it Broq. And so I just wanted to dive in. I know on their website accurately, they have more sulforaphane in their capsule than BrocElite. And what are some of the other differences and maybe even similarities between our products? Mainly differences.

Dr. Martin Katz:

I mean, I'd like to go a few steps backwards as a clinician and just sort of discuss my frustration with the global supplement market and sort of why not exactly why we got into this. And during this podcast that we did, we got into, and it was actually illuminating for me as well, just how the supplement market misses the mark on certain things, one of which is adding so many fillers and other things to their tablets to make them look more large and have more than what's in them. Number two, bioavailability. And for me, that's probably the most important thing. So in the clinic when somebody comes in with a large supply of supplement and we're trying to advise them clinically on how best to support their system or a disease process or a health process, rather, we're not trying to support a disease process, we're trying to support the health process.

We really want these supplements to get to their target and work. And during this webinar, we went through how John used, which one did you use John?... But it's very similar to turmeric where you have this mother molecule... Oh yeah. So you astragalus another phenomenal molecule, but we also often talk about turmeric, but what the molecule that's been studied that we're after is curcumin, which is only 2% of turmeric, and further it's only absorbed at 2%. And so by the time you get to the cell, you really don't have much of a molecule there. And so again, what's so important and what we're trying to focus on here at Mara Labs is just trying to make a molecule that gets through these barriers, whether it's the acidity of the stomach, the barrier, the gastrointestinal lining barrier, the liver, the first pass metabolism and to the cell in a meaningful way that actually has an effect on supporting the health of the cell, the processes that keep us healthy, whether it's autophagy, antioxidation, apoptosis, senescent cells, et cetera. So anyway, this is where we struggle to try and communicate this to our customers to the larger population and where these supplement companies can come in and say, Hey, we have this molecule. But what they don't often tell us is how they're getting the molecule there, if they even are. And this is where this discussion came in with this Brock supplement.

David:

And when Mara, my late wife was on her cancer journey, John and I were meeting together and reading lots of great literature about these amazing phytochemicals that were killing cancer. But the question became, if Mara took something, how do we know? It got through the gut lining and then it actually got into the bloodstream and then it got to the cells at a dose that would replicate the findings in these amazing papers,

Dr. Martin Katz:

These papers are, again, we talked about this numerous times, and are based on cell culture, right? Correct. So these are just cells that are exposed to these molecules, so it's very easy to see.

David:

So there's no gut lining, it's just the cell. So they grow the cancer cells in the lab, they put things like curcumin on them or whatever,

Dr Martin Katz:

Sulforaphane...

David:

... And you see cell death, but that doesn't necessarily translate into it working in a human. And so a lot of my research was like, how do we know? And so going back to the original point when people put filler, when supplemental companies put filler flow agents, you get less of the active ingredient and then they may reference these cell studies or even some say, Hey, we have a thousand milligrams of curcumin in this capsule, but when it's less than 1% bioavailable, it's very little. It just doesn't get enough in the bloodstream into the cells to make a biological difference. Going back to

Dr. Martin Katz:

The original point...

David:

The original question, BrocElite versus Broq, I'll be polite and pronounce it the way they would want me to. BrocElite versus Broq comparison. Compare and contrast, John.

Dr. John Gildea:

Yeah. So I think for me the biggest differences, and luckily the reason why you're looking for a broccoli product is because there's millions and millions and millions of dollars spent from Johns Hopkins sending out sulforaphane from a broccoli sprout extract that was made by a scientific lab. And every time they did the study, they proved how much was in it and then measured also in the patient population the amount that gets in the urine to make sure that it's reaching a dose that should be effective. And so that's what you're comparing it to and really it's up to the person who's making the supplement to prove that that's the equivalent. What we have is the equivalent of that...

David:

... study of the sulforaphane product in the study.

Dr. John Gildea:

And so in that particular study, they even didn't show direct NRF2 activation, so they looked downstream of it. So things like the oxygenase and QO1. So there's a bunch of things that are induced by NRF2, and they do find those induced. And then I do believe that it is reaching a therapeutic dose in those populations, but ours actually exceeds what was done in those papers. And it's because we have more of the ancillary isothiocyanates that are in the broccoli. They're all stabilized. And so they didn't stabilize it. They just froze it. And so

David:

The Johns Hopkins study,

Dr. John Gildea:

And so when I measured it at the cell level, we see a clear NF two induction. And when I did the same experiment with Broq, I didn't see induction. And so,

David:

That was with buccal cells, correct? In your cheeks.

Dr. John Gildea:

Yeah. So it has to go, you swallow it, but it goes down into your stomach to get to the intestines to be absorbed and then has to make it back into the circulation and back to your head. And then across the capillary bed, across the endothelial cells, into the cells that are actually pretty difficult to get to, which is your squamous epithelial, that's fish scales. So there's multiple layers of these cells in order to get it to the outside layer. And then when you're doing the test, you're scraping the outside layer of cells in order to look at the nuclear translocation of NRF2. So it's a difficult test to show an induction in. And so that's just one of those take the worst case scenario and then if yours does get to that, then you don't have to look elsewhere.

David:

So basically the Johns Hopkins studies, which there are lots of them showing the efficacy of sulforaphane, they basically took the natural product of broccoli seeds, broccoli sprouts, and they took myrosinase and converted the glucoraphanin into sulforaphane. They measured it, but in so doing, they also converted all the other isothiocyanates, these cousin molecules to sulforaphane that's naturally in the broccoli seed. It's not just sulforaphane. Sulforaphane is the one that's known and talked about most, but there are what, nine others? And then in BrocElite we add one that's not in broccoli seed but is in the other watercress. Yes. And so P-E-I-T-C, so there are approximately 10 isothiocyanates in BrocElite that nine of which are in these Johns Hopkins studies. Now with Broq's chemical extraction versus our water extraction. Does that, it sounds like that impacts what isothiocyanates are extracted from the broccoli seed. Is that correct?

Dr. John Gildea:

Yeah, so the idea here is pretty simple, is that we have the advantages. They have a patent on theirs, so we can look exactly how they made it. And so if they're making it the same way that the original company from France did it that got the patent, then we know how they're making it. Exactly.

David:

Well Broq is making it in France and sending it. So if you look on the Broq bottle, it says made in France,

Dr. John Gildea:

So it's made in the same place. So you have an affinity column. So I'm not sure if people know all the steps there, but I can go through all the steps.

David:

No, you don't need to go, don't go through the steps, just Simplify it.

Dr. John Gildea:

So when you chemically fractionate you aim to optimize the isothiocyanate for the specific compound you're trying to isolate, which is sulforaphane. So you may get some other ones, but just because of tail ends, they're accidentally, they're contaminants for the process.

David:

And so they do the enzymatic process like we do where they use myrosinase, but then they're using a solvent called acetone, which is what you use to get rid of your nail polish. And then they use ethyl acetate, which is another part of the solvent extraction, which is a very, it's very powerful solvent, isn't it?

Dr. John Gildea:

And then getting it off the column they use methanol.

There's three pretty nasty solvents which you're not really supposed to have in any natural product. Now, they're volatile. So most of it is gone, but it is definitely affecting the constitution, what's in the extract.

David:

Yes. So solvent extraction, these chemicals, and because they don't have the other eight isothiocyanates and we have an additional one in watercress, PEITC, they can't take advantage. Broq doesn't take advantage of the synergy. So basically one plus one equals five one plus one equals three. There's this power that's actually in the literature when you add sulforaphane and P-E-I-T-C together, it is not additive. It's a larger effect.

Dr. Martin Katz:

John, do you think that's why you're seeing little in NRF2 induction for those two reasons, the solvents and the lack of synergy?

Dr. John Gildea

Yeah, I think it is the synergy. And I'm seeing very big differences too when you put it right on cell culture. So, it is a different, completely different.

David:

What did you see? What cells?

Dr. John Gildea:

Most sensitive cell line in the body and pharma uses this for AOX studies, how to tell whether a drug is toxic or not.

David:

Yeah, LD 50

Dr. John Gildea:

Is at least of those 50 they use liver cells and they use kidney cells. And the kidney cells they use are proximal tubular cells. So I put these extracts on those cells and you can get an LD 50 from each of the products and they're wildly different. So just pure sulforaphane has an LD 50, that means it's 100% sulforaphane, not anything else at all in it.

David:

And we get that from Sigma Aldrich, which is how we actually, we got this question today, how did we actually get Sulforaphane to find out that it worked on Mar cells and that was that from Sigma?

Dr. John Gildea:

Yeah. And that one actually does have some LD 50 for kidney cells, so you have to be careful how much you take and it's close to 10 micrml.

David:

And what did you see with the other two products?

Dr. John Gildea:

So with Broq, it acted just like Sulforaphane Broq, it acted just like pure sulforaphane. So, I mean kudos to them, it's acting just like the pure product. But when we put our product on it, it didn't so our LD 50 didn't kill cells, it actually made them grow.

David:

So it grew kidney cells did not kill kidney, kidney cells

Dr. John Gildea:

And even much, much, much higher concentrations.

David:

Okay. So yeah, that's a significant difference. Another significant difference is the pricing. And that's significant for patients, isn't it, Martin?

Dr. Martin Katz:

Well, absolutely. I mean it's rare these days. It seems like when people are sort of reaching out, understanding that the current healthcare paradigm is not necessarily revolving around the health of their cells, it's really reacting to diseases. So people are sort of waiting until they're sick and then they're sick and they realize just how hard it is to reverse that truck then or that trend once you're a diabetic. It is so difficult to reverse it. That physiology has been happening for years. Hypertension, you name it, cardiovascular disease, these things are really, really difficult to reverse. And so supporting the health of these systems is just so important. And so it's rare that I have anybody coming in with just one supplement these

days. They're coming in with 2, 3, 4, and when you're starting to see if one supplement cost over 65, 50, 65, \$70, and I think Broq is now...

David:

Between \$90 and \$96

Dr. Martin Katz:

I mean, that's a lot of money you're spending. Money's a lot of money. And again, sulforaphane is a phenomenal molecule. So I can see why somebody would want to take it and it has so many effects that it is a worthwhile investment. But you want it to work.

David:

It's the modern day elixir.

Dr. Martin Katz:

Yeah. Right. So yeah, I can understand it, but again, it needs to work and unfortunately this doesn't seem to have those properties.

David:

Yeah. Well I wanted this to be a short discussion. We've highlighted a lot of the issues. I think the main thing boils down to the extraction. And so in the Johns Hopkins papers, they have a water aqueous extraction of the sulforaphane and the sulforaphane and the other isothiocyanates that make it into the broccoli sprout beverage that they freeze and then they measure freeze give to patients during the studies. BrocElite, our product, does the water aqueous extraction of broccoli seeds and extracts the same isothiocyanates that are in the seeds. And we add one called P-E-I-T-C, that's the plus. And BrocElite plus versus Broq which does a solvent extraction. And so it's more like the pure Sigma Aldrich compound, which is just sulforaphane. And even though they have more sulforaphane in their capsule, they have 26 milligrams in their capsule. We have 11 milligrams, they have over twice as much sulforaphane in their capsule. But as John so eloquently put it, that pure sulforaphane versus our mixture of sulforaphane and other isothiocyanates, that mixture actually provides a synergy that induces NrF2. And that's the magic NrF2 is for phase two detox. It's responsible for the antioxidant response element of over 200 genes that are created, start creating different various antioxidants that turn on, stay on for 72 hours. What else does a NrF2 do? Guys?

Dr. John Gildea:

Inflammation.

David:

Inflammation, super good for inflammation. He oxygenase,

Dr. Martin Katz:

You said detox, I'm sure. Yep.

David:

Phase two detox. Yeah. So that pathway is the magic. It's what you're reading about in the literature, it's what you want to turn on and it's sulforaphane is the best natural molecule at

turning on you just do it better when you have all the other isothiocyanates from nature really is what we're doing. We're just giving the natural potpourri of various phytochemicals, phytonutrients. So we're going to leave it there. Any closing thoughts?

Dr. Martin Katz:

Take care of you're human.

David:

Alright, thanks everyone for listening. We'll be back next week.