Adam Payne's biotech origins

Well, Adam Payne, this is going to be such a powerful interview. you are the inventor of a lot of things. I mean, you're an inventor of the technology.

That's you said at UltraBotanica, and you're also the CEO of the company. tell me a little bit about your passion in this direction, because this was not where you started.

You started in the pharmaceutical industry, right? Well, I started, in a biotech incubator back in 2005 with a guy named Bill Hagstrom who had come out of the, out of, Boston Scientific and a couple of other, companies that spun out of Boston Scientific.

We had developed, an incubator that was focused on looking at technologies that were, not touched, untouched in Oklahoma. And you might not think of Oklahoma as an interesting place for biotechnology, but, you know, in the, in the Bay area, every single research lab is picked over by every single, venture fund that's out there looking for any possibilities of something that could be, brought forth, from the bench into the clinic and out here in Oklahoma, nothing was touched.

And literally, doc, we had, five technologies that were astonishing breakthroughs that in each one of their fields could have been, a blockbuster drug or laboratory diagnostic.

And so, when we started the incubator, it was called Alpha Biopartners.

Discovery of botanical medicine

Back in 2005. We were immediately jettisoned into the fourth dimension of biotechnology with three companies that, each of which have become, status symbols in today's in today's practicing medicine, one of which is, something that myriad bio sciences picked up.

It was a multiplex cytokine assay that became a, the gold standard currently in measuring disease activity in rheumatoid arthritis. And the other is an antimicrobial peptide that is being brought forth in Allergan as a treatment for gram negative infections.

So all of these things started in 2005. but that led to really amazing discoveries that we were, learning in natural products, which is where my passion is today.

And so and it's just fascinating to me. I mean, here you are. And and it just kind of shows your mindset, chose your background, and then you, you stepped into, you know, being exposed to all of that and dealing with all of that.

Then all of a sudden you moved more into this natural realm. Yeah. Where you're now. Yeah. And so what what created that shift? Well, so we were, it happened when we were looking at these, these laboratory diagnostic tests.

We had been conducting clinical studies in India because it was a it was one of the only places on Earth where we could find rheumatoid arthritis patients that were completely treatment naive and, which is you can't find anywhere on Earth.

Literally only in India could we find these people. And so we would go in, we would recruit them into clinical studies where we could, find, different people that were clinically naive for treatment.

And we were able to then test them in the process of doing that. One of the researchers there said that they had found an herbal extract that was being used in the clinic, and that was reversing rheumatoid arthritis.

And he was desperate for us to test this stuff. So we, we got Ahold of it after months and months of him literally begging us to take a look at it. And what we found was something astonishing.

Doc, we used, a sepsis model to first take a look at this product, and it was stopping sepsis in its tracks. And as you know, once sepsis starts in a, in, in a person, it's almost impossible to rein the immune system back in.

But we were seeing we were able to initiate sepsis in a, in a mouse model. And two hours after the initiation of sepsis, we were able to stop it with a, an herbal product.

we first thought it was maybe some adulterated mixture of herbs and, maybe steroids and something like that. But as it turns out, it wasn't. It was a unique mixture from, Western, medicine herbal extracts, of, an ancient tradition that is called electro homeopathy.

But it had nothing to do with homeopathic, and it had nothing to do with, and it was completely novel. we were able to, I to, characterize this herbal mixture and bring it forward into the United States as a treatment for eczema and psoriasis.

It turns out the same that this herbal mixture was affecting the cytokines that were involved in the initiation and the proliferation of both eczema and psoriasis in the skin.

IL23 and IL17 was, was impacted directly by this herbal extract. And, to make a really long story short, we'd gained this reputation for, being the guys in botanical medicine here in Oklahoma and one of, a researcher from a Shogun's lab.

And these are the people that work in, Shoguns and lupus came to us and said, look, Adam, you guys have been doing amazing things in herbal medicine. Would you mind looking at curcumin?

I think I've developed something that is really meaningful in curcumin. And honestly, Dr. Karlfeldt we. I didn't want to I didn't I really didn't want to, touch curcumin.

I had been at many scientific meetings and the get the, the gastroenterology meetings, rheumatology meetings. And I'd seen, as you probably had seen at that time back in 2010, posters after poster after poster presentation talking about the wonders of curcumin.

And I thought to myself that people had already figured out how to, what was going on with curcumin and nothing. We we weren't going to be able to do anything new with, with the substance.

but I was wrong.

Curcumin absorption and delivery

We were actually able to, figure out how to transport curcumin, across, across the gut barrier and more importantly, how to transport it across the blood brain barrier.

These were insights that, if we hadn't been on the rheumatology track, if we hadn't been doing clinical studies in India, if we hadn't been if we hadn't gotten a reputation in herbal medicine, we never would have been introduced to curcumin from this, this little known researcher at the Oklahoma medical Research Foundation, a guy named B. G.

Curry, and and, and we never would have developed this breakthrough technology that is now, I think one of the fastest growing and most powerful curcumin technologies, in, in the clinic.

Yeah. Because one of the. Yeah. Tell me some of the challenges with the regular curcumin because everybody talks about, you know, yes, curcumin is great.

But you know, the the challenges is obviously the absorption, the utilization and how to get it to the target where you need it. So the talked a little bit about that.

Sure too. So curcumin is a polyphenol. It's a it's a molecule that has actually two phenolic rings on the sides. And then there's a hydroxy group in the hydroxyl group in the middle.

And it's a long flexible chain. It's actually been it was discovered, because, epidemiologists, these are the statisticians that study population trends.

Notice that certain populations on Earth had lower cancer rates, lower Alzheimer's rates, lower and lower diabetes rates. And when they looked at all of the variables that were available to them, the it wasn't genomics, it wasn't geography, it wasn't race.

The only independent variable that remained was if, the turmeric root was a daily part of their diet, then they had these lower cancer rates in Alzheimer's rates.

And if they didn't, then it was the normal, global population rates. This is why the, the folks in Okinawa, live longer, because they use turmeric tea on a daily basis.

This is why, these population groups in India have these same lower cancer rates. It's because they use to turmeric in their daily diet. And this spawned tons of research on turmeric back in the 70s, where they were able to isolate, discover curcumin in its extracted form.

Curcumin is about 3 to 2 to 3% of the turmeric root plant. And it's, it creates a crystal and extract this crystal and extract is completely insoluble in the gut.

under basic conditions, it's it is soluble, but it's very fragile, so it doesn't last very long. And so all of the efforts to make it bioavailable to the human body have focused on microRNAs using the crystal, increasing exponentially the surface area and hopefully creating enough surface area so some of it would dissolve.

So it would release a molecule of the curcumin to allow it to interact with the cells in our body. But, horrible efficacy. There were tons of research done on curcumin in cancer, tons of research done on curcumin and inflammatory diseases.

And nothing, absolutely nothing move the needle. And this is because curcumin doesn't absorb so, we had a, a very simple observation. And Doctor Kurien, who was working with curcumin, he had a very simple idea.

His idea was let's take the curcumin molecule and get it into a liquid matrix. Let's dissolve it, let's drive it into solution and provide that liquid curcumin as the dosage form. And, doc, it worked.

The liquid curcumin. We felt it I remember to the, to the horror of Doctor Curry and we made some of this stuff and we sat around a table and we took shot glasses of it while he looked on in horror.

He was like, Adam, we can't you can't do that. We haven't done any of the toxicity studies yet. You shouldn't do that yet. And I'm like, BG curcumin has been studied for for decades.

Nobody's ever found anything toxic about it. And in my laser fair, entrepreneur mindset, I was like, we're going to try this stuff. And we did, and we felt it, I felt it.

We we got this. We call it the curcumin buzz. And we, we looked at each other like five minutes after we taking these shots of liquid curcumin. And we knew we knew that we were each of us were feeling it and we were we're like, wow, this is crazy.

We're feeling it in our central nervous system. So not only was it absorbing through our gut, it was going into our brains. but that that wasn't enough.

because it wasn't stable. Nobody wanted to take home, you know, 30 bottle big bottles of curcumin as their monthly supply. so we went back to the drawing board, doc.

And what I learned that was this is that curcumin had a higher coefficient of binding to proteins than it did to itself. And we this is what we learned based upon playing with the, with the curcumin and looking at different substrates.

And, the idea came to me, why don't we just use protein as a prodrug? And so what we did, we tried it. We attached soluble curcumin to a protein. And what I thought was that maybe as the body's digesting that protein matrix, those molecules would be released.

And lo and behold, it was it worked. It people were reporting to us overnight results with curcumin that nobody had ever seen before. a dear friend of mine, an ex Special Forces, guy, he had bilateral tennis elbow and, I gave him a bucket of the stuff, and he called me the next morning saying he was chipping golf balls off of his back porch, that he had pushed himself out of bed in the morning without thinking he had never he hadn't been able to do that six months.

He had curled dumbbells and he was calling me saying, is it possible that this stuff worked this quickly? I can move my elbows. I can use my arms. Doc. We were we were astonished.

And that was literally the birth of what we call ultra ker, which is our curcumin protein conjugate. Yeah. And that that's a that's a product that's a staple in my practice, for I mean I'll, I'll my cancer patients and and every, every anyone inflammatory condition.

So just a couple of questions. So just to kind of clarify. So here initially you had the, the, the curcumin and then you put it in a liquid solution and you drank that.

So is it possible then people that buy just regular curcumin and just put it in water, is that the same thing or. you can get there. there's something called golden milk, which is actually a staple of India where they heat up the tumeric root and milk and, and they get this golden milk.

They use it traditionally in their late cultures for as a natural fever reducer, as a natural pain reducer. And guess what's happening? The curcumin molecules are being liberated from the tumor plant.

It's binding to the proteins in the milk. And it's it's ultra CR in its native form in the, in its traditional sense. but you're not going to get the high dosages that you get with ultra CR in order to get, you know, multiple milligram quantities into the body, you really need to take a concentrated form.

You can you'd have to use about 4 or 5 tablespoons of raw tumeric in order to get the same benefit that you would have with ultra CR, but, you know, it's it's a start.

It's definitely a start for people that don't, that are looking for a quick fix. And, because I just want to kind of go through another one. Is that you, you combine curcumin with black pepper, you know, so, so can you explain a little bit, how how efficient is that in as a delivery mechanism.

So a lot of people, you're right, many people believe that black pepper is necessary in order to improve the absorption of curcumin. And in fact, it's a misnomer.

black pepper does has very, very little impact on absorption of curcumin in the body. What it what black pepper is doing is it is inhibiting a liver enzyme called glucagon a days.

and, this is, artificially increasing the little bits of curcumin that are absorbed with other forms of curcumin by inhibiting first pass metabolism, glucagon, today's glucosinolates, the curcumin.

And that's, that's the first kind of metabolic pathway that that breaks up the quick humanoids and turns it into tetrahedra, curcumin voids. and then it has many other degradation pathways after that.

we don't really need to use black pepper to, to improve our absorption. We provide such a high, bolus or, a big, a large amount of crack humanoids that naturally absorb through the gut by using this protein transport, technology.

So it's called a LPs, right? Liquid protein scaffolding.

Protein scaffolding and berberine

So you're kind of adding these proteins, and when you do that, use that technology. It it kind of hits I mean, it goes in the bloodstream like within 20 minutes or so.

Right. That's exactly right. the the whey protein, scaffolding is completely absorbed within 20 minutes. in our non-cancer scaffolds, we use an acetylcysteine because it's, we can get a lot more of the bioactive plant compounds on that scaffold.

And we also use brown rice protein and organic brown rice protein as a scaffold when we want a little bit of a longer absorption profile. and we we're not too concerned about the speed of the absorption.

But all told, we have met, we have many, many different, scaffolds. And more importantly, we've learned that this technology works on many plant bioactive compounds that, heretofore have been, and haven't been really stellar, actors in the cancer realm or in the inflammation realm or in the metabolic realm.

One of these is berberine. As you know, berberine is has the promise of being a very important molecule both in cancer and in, in, and insulin resistance for its ability or its supposed ability to influence the Ampk pathway inside of a cell. And, berberine just doesn't absorb normally it in its extracted form, it has the same solubility that curcumin has.

It's micrograms per ML will absorb in the body. but our formula, by attaching it to to whey protein or brown rice protein, it absorbs almost immediately.

And we see, resolutions of insulin resistance in people that have metabolic syndrome within two hours. That's incredible. So a person when you talk, you say whey protein or it's not like you can, you know, take the pill of normal berberine and drink it, you know, swallow it with a, a way, you know, protein powder.

No, no. It would not have the same effect because this is a kind of a technology where you kind of you physically attach them in order to be able to increase the, the absorption.

That's right. We actually we do protein chemistry here at our facility. We have 25,000ft² of pharmaceutical grade manufacturing here behind me. And where we will physically conjugate these, these plant bioactive compounds to the scaffolding.

And then we dry them down and turn them into a free flowing powder that's used in capsules and drink mixes and in all sorts of different forms. And, and so in cancer, I mean, you have kind of the traditional oncology route, you know, you got the chemo, radiation, surgery, immunotherapy, you know, hormone deprivation or hormone.

so how does what are some of the challenges that exist within that field? And, and how does, this, these kind of, these products kind of, add to what's going on in that field?

So this is where things got really interesting for us about four years ago. what I learned was that there are many cellular pathways that are out of balance in cancer.

We call them metabolic pathways. And these pathways have to do with, the activation, the over activation of cellular replication or, or or division. We these are pathways that have to do with energy allocation inside the cell.

These are pathways that have to do with inflammation. And, the reaction of cancer cells to inflammation, signal, etc.. And we've mapped these out. Well, what it turns out, doc, is, that some of these cellular pathways that are out

of balance in cancer cells just like what we've what we learned with inflammation and curcumin, how it affects NF kappa beta, which is that primary signaling pathway inside of a cell that has to do with inflammation, and as well as curcumin addresses inflammation.

There are other cellular pathways that are dysregulated in cancer that are uniquely that have unique, botanical extracts that can address those dysfunctions.

One of those, for example, is Ampk, which can be, highly dysregulated in cancer cells as they're as it's trying as it's dealing with glucose metabolism and its energy balance.

Berberine, which we which we've already talked about significantly impacts Ampk much better than some pharmaceuticals and much better than any other, intervention that that we know of.

In fact, berberine is almost a perfect lock and key to the Ampk pathway. and it can disrupt significantly glucose metabolism, which is one of the primary energy sources for cancer cell.

And so all these different pathways, you know, how so the chemo kind of help me understand. So the chemo radiation, all of that, none of these really impact these pathways.

Is is that what I'm hearing. Well they can so chemo can affect directly a number of a whole slew of different pathways by weakening a cancer cell directly, through its metal toxicities and all the different toxicities that, that are can be present in a cancer cell, immune drugs or these immune modulating drugs that specifically target 1 or 2 different aberrant pathways in the cell are, are being used, quite, prolifically right now in cancer.

But I'll give you an example. So for example, there is a pathway we call the P13 Akt mTOR map Erk pathway. This is a pathway that regulates cellular energy and cellular division.

And and in many cancers it is it is completely out of control which contributes to the uncontrolled division and growth of cancer cells. When this when this p13 mTOR map Erk pathway is, completely activated.

curcumin and quercetin and a number of other compounds that are in some of the products that we make, which we call pathway products, can uniquely interfere with those with that pathway by interfering with the mTOR portion of cell signaling inside of the cell.

So it's kind of like you you have and like you mentioned, you know, the chemo with the toxic heavy metals, you know, I can kind of interfere with a lot of these things, but obviously these are toxic metals and it comes with the cost.

Yeah. So when you then pull away then you're then dealing with dysfunctional cellular mechanisms, even in healthy cells because it interferes, you know, with healthy function within those cells.

So where do these kind of natural agents fit into that picture? You know, how do they add value to what the chemo drugs do?

Cancer pathways and botanical support

Can they do similar things in a way for people that are, do not choose to do chemo or post chemo, or maybe they just want to their concern and they want to support these mechanisms anyway.

So as you know, doc, we provide a, a meta analytical framework that we, that we've put together that maps out, 21 different metabolic pathways in cancer cells that can be dysregulated.

And we mapped them out on a scale of 1 to 10. So to provide a framework for you as a clinician to help you dial in, where this cancer, where these different cancers might have their, their highest metabolic dysfunction and that and with that information, you have your, you have pharmaceutical interventions that are off label, that you can use.

You have, natural interventions that you can use hyperbaric or oxygen, vitamin C, etc.. the mistletoe injections, all of the different the, the, the plethora of, of interventions that you can use.

And then we've mapped into those same metabolic pathways how the different bioactive plant compounds, these polyphenols. And I said quinone ingredients can synergistically and significantly impact those same pathways.

giving giving us as of the clinical world, a toolkit that we can use to different really we can cancer cells where they are most fragile, which is these dysregulated, metabolic pathways.

And and I assume, you know, from my understanding is that, you know, these natural agents ability wisdom is that they they have such a complex structure, chemical structure, that makes them very useful and makes it very hard for cancer cells to really adapt and adjust because it is such a, kind of very complex, you know, address, you know, addressing of, you know, these different pathways.

It's true. it I don't know why God made this biology this way, but it, the most powerful agents that can affect these different, metabolic pathways are plant extracts like curcumin.

I'll give you another example. Nrf2 nerve two, which is, one of the a phase two detoxification pathway. Curcumin is one of the most powerful Nrf2 regulators.

and when we want to affect that dysregulated pathway, we can bring in these bioactive plant compounds like EGCg, resveratrol, curcumin, berberine that can, differentially affect these dysregulated, cellular, pathways that, are out of control in cancer and many different cancers.

And, and so you, you create your company. I mean, you distinctly created, you know, four pathways, you know, for products, you know, one for, you know, you call, pathway one, two, three, four, you know why.

And each one has a very specific, yeah. You know, set of all the herbs, you know, within them. So what are the differences between one, two, three, four?

I mean, why, sure. You know, some in number one, some in number two and and so forth. So, pathway one is, based upon research that we've done on hemp extracts and frankincense extracts is frankincense essential oils.

this is pathway one is the one product that deals with, the the connection of cancer to fungus and immune cell dysregulation. frankincense was has been used since ancient times as a very powerful antifungal agent as, on a whole number of different things that it can do internally in the body with the digestion, etc..

One of the grandfathers of frankincense research is a guy named H. K. Lin, who was a part of the oncology urology group here in Oklahoma City, a tenured professor who published over 100 research papers about frankincense.

We were able to bring his research here into, our, into pathway one product and, and modify both the species and the extraction method that's being used for the frankincense essential oil, and to modify its absorption so that it could have the most benefit for people that are dealing with cancer.

It seems to inhibit the, the fungal component of cancer cells, and which is really interesting. We didn't know that there was such a strong connection between fungal ecologies and cancers until the recent, Israeli paper was published in cell, which has shown that there are fungal ecologies with every single solid tumor that they were able to find.

And this was a search of over 17,000 different solid tumors, across the globe. The name of the paper is Fungal in Bacterial Ecologies. In in cancer cells.

and it's truly a landmark paper. and we believe that the, components of pathway one are uniquely suited to address some of that dysbiosis. Pathway two is a combination of curcumin and quercetin, which we, formulated uniquely for its ability to synergistically affect different pathways that curcumin and quercetin, can differentially affect.

NF kappa, beta, nerve two, Cox two Loks five are all, cellular pathways that are synergistically addressed with curcumin in quercetin. And one of my favorite pathways that, is responsible for the immortal ization of cancer cells, a pathway called p53, which many cancer cells protect and don't express.

curcumin and quercetin synergistically can activate that. But let me ask a little bit more about path we want. I just want to backtrack a little bit. So sure, because a lot of people out there, they use frankincense essential oils.

and so how or they would take a bus Valy. you know, supplement Australia. Frankincense. Interchangeable. how does this what do you have? How is that different than what you would find out there?

it's extremely different. where do I begin? First of all, we start by depleting the monitor pins out of frankincense. the essential oil. Because the monitor pins have no therapeutic or, health benefit to people.

In fact, the monitor pins, can cause extreme nausea and irritation in the body. And so we first off, without our starting places to deplete the monitor pins out of, the frankincense.

Secondly, we're using a cultivar of frankincense that is very little known, but which we have studied at the labs in the University of Oklahoma. has the most potency and its ability to differentially affect cancer cells and thus allowing us to, achieve a healthy status with a much more powerful cultivar of frankincense.

So we're using, a very little known cultivar of frankincense, and we are providing a dosage form that is providing the least amount of irritation in and won't, cause nausea or any other kind of unwanted health effects.

And, and also you mentioned like the cannabinoids and we all, you know, a lot of people out there taking CBD and CBD and C and so is that essentially a kind of the what you do there as well?

Is that equal to what's out there? No it's not. In fact, our research has shown that it is not the, it is just people are doing just the opposite of what they need to do with cannabinoids as what we have in our pathway.

One formula, our research has shown, doc, that it is the acidic forms of the cannabinoids that have their most benefit in people that are dealing with cancer.

And so we have a magic ratio that we use of the acidic to the non acidic cannabinoids. And people can understand what the acidic cannabinoids are. It's the CBD, it's the CBG.

It's the micro amounts of THC that we allow that are within the federal limits. this is not a marijuana product. It is a, it is a hemp product which has below 0.3% THC in it.

And again, we are preferentially keeping the cannabinoid profile in its native acidic forms, not taking not the carboxylate, the cannabinoid and essentially, making it inactive in people that are dealing with cancer, it is the acidic forms that actually have the most benefit.

And then we're using cultivars of hemp that we have shown have the most, high bio activity, in cancer. we've, we use Jeanette a specific genetics or cultivars that, provide a, a profile that we extract using cryogenic conditions that maintains not only the acidic cannabinoids, but also a very specific terpene profile that we have found has the most benefit for people.

There's a lot of people out there, the use like, also, you know, like Simpson's oils so that this is, and I know there's a huge amount of different qualities out there.

So just because it says reso doesn't mean doesn't. Mean has anything. Yeah. It has nothing to do with what? and this is the, the research question that got me.

Yeah. Five years ago, we had a, a medical marijuana activist on our board that was pushing us to try to do some research in marijuana and cancer.

Pathway formulas and clinical use

And when I was looking at it, I'm, as I'm sure as you looked at it, doc, there's such variability in the results people get with Urso and I think the reason that the real reason why they're getting such variable results is that most people heat the urso up in order to d carboxylate the cannabinoids thinking, because they think that they need to activate the cannabinoids because that's what they do with THC in order to activate THC and make it psychoactive, you heat it up and you take the acidic form.

We turn it from HCA to THC, but it's just the opposite for cannabinoids. It's not the it's the the D acidified the carboxylate. It forms have almost no benefit in cancer.

It is the acidic forms that actually are the, are the beneficiaries. And that is what you have. Then with the, you know, a very unique, powerful form of, of Frank and Senator Boswell.

Yeah, yeah. And, and, Onkar Junghwan, and so then, yeah, they, we talked a lot about the, the oncogene, you know, the pathway three. Right. Which, which is that the berberine, with the increased delivery and, and you, you talked about the Ampk, but one thing that a lot of people also are concerned about is, you know, that that cancer cells are very, you know, sugar hungry.

I mean, they, they, they fuel on cancer because of that fermentation process. That's right. So, you know, talk a little bit about that. berberine. Well that's berberine actually modulates the sugar metabolism.

and in inhibits glycolysis metabolism. It, it tries to shunt it towards aerobic respiration towards the Krebs cycle, which of course, cancer cells which have highly damaged mitochondria.

is it doesn't work there. So burger and harms can harm a cancer cell by cause by inhibiting glycolysis that that inefficient use of, of glucose. that most cancer cells are relying on for, for its energy.

And we're actually we're coming out with a new product which will be pathway three plus. We're combining the berberine with American bio sciences, metro law, fermented wheat germ extract concentrate.

And we have we've done a lot of research, as I'm sure you have, doc on what that fermented wheat term extract its mechanism activity, its primary mode of of how it inhibits cancer cells is through inhibiting this, glycolysis or this, this sugar, fermentation, pathway.

So we'll have the one two punch with pathway three plus the berberine, the highly absorbed LPL, berberine plus the fermented we term extract as pathway three plus coming out in a couple of weeks.

That's really exciting. Yeah. Because that's the whole the name of the game. You know what what we're finding is that, you know, if you can control a lot of these pathways that that supporting cancer activity and then at the same time drive energy production through the mitochondria and interfere with the, the process, the kind of fermentation process that normal cancer cell, are utilizing.

You know, because in the mitochondria that's where kind of the cell death switch exists. That's where. That's right. Genetic repair exists. So anytime we can kind of drive it through the mitochondria, we're we're going to benefit.

Exactly. And we're playing with some really unique compounds that are coming out in pathway five, like your litany will be, you know, is uniquely works with our protein scaffolding technology.

This is a very powerful my tough, ag inducing compound, which I'm sure you've heard about. And we're looking at at other compounds like episodic acid, which also, shut down fermentation energy production and cause or move the body towards mitochondrial repair.

So there's some really exciting things that are out there. Pathway four is a unique set of polyphenol ingredients that uniquely affect, hypoxic pathways in the cell.

If is, highly activated in cancer cells because they're living in an oxygen hypoxic environment and EGCg, resveratrol, and a little known polyphenol called feis iton, all synergistically address these high pass hypoxic pathways and can, regulate a cell and weaken a cell that is, dysregulated in that way.

Yeah. And and, you know, it's interesting, you know, kind of looking at that blend in addition to the benefit working on, on these pathways, I mean, it's like an anti-aging blend as well.

I mean, I yeah, I know you have a AC analytic, you know, blend already, but yeah, just, you know, for people that are wanting to kind of do preventative measures.

Yeah. Yeah. The pathway for is both anti-aging. Yeah. And you know, talking about senescent cells and clearing out senescent cells, you know, it's it's a powerful tool just in that alone.

I agree. And it also includes, dines, beta glucans concentrate, which is a highly purified and very highly bioactive, beta 1316 beta glucans material.

We're really excited about that whole combination. has a regenerative effect on senescent immune cells and also has a very powerful, botanical signal on many, many different, cellular pathways that are dysregulated in cancer.

Yeah, yeah. That's exciting. So for an individual then, can I'm concerned in regards to cancer, how should they just take all for, I mean, as it would, that I don't see any harm in taking all four.

I mean, that seems to be kind of a good punch. Yeah, there's, all of these products are available online. They don't require a prescription. and they can be used, and to help, on a, to, to maintain health for people that are worried about different health conditions.

We would highly recommend that anybody that's dealing with cancer or wants to, prevent cancer in their bodies to work with an integrative physician or a natural path that has, a background in cancer, like with the Fabio certification or a good clinical nutritionist that has, a background in, in cancer and wellness.

these some of these compounds really need to be dialed in specifically to the type of cancer that people have and not just taken in a vacuum. Yeah. No, that and that's absolutely true.

And you're like you mentioned, you know, and which would you have access to. You know, those, you know, mapping out for each cancer. You know which pathways.

Now you've already done that groundwork. And then also then showing, you know, natural agents, you know, that exists within the the pathway one through four, that can then benefit, you know, and, and each one of these pathways that are dysregulated and the specific cancers.

You know, it can be very powerful tool that, we give to physicians and clinicians that have a medical license, to help make a decision that we provide in our formulas, the basic dosing.

And it, a clinician could choose to to do multiples of any of these products up to 2 to 3 times higher dosing when it's appropriate to the health condition that, the patient has.

Yeah, I love it. Love it. Well, any anything else that you feel is is important that that that we've missed in regards to. Yeah. Because this such a powerful tool for people I want to make sure that they, that they fully understand, you know, how how this can benefit them.

Well, we, we strongly recommend working with a clinician. If anybody is dealing with cancer, first, find yourself the right health team. That's that's that is the first step.

And then, your health coach, your clinician will help guide you in making the right decisions about which which products, whether they're nutraceutical or pharmaceutical, can help, provide the best benefit.

You know, the the book Tripping over the Truth by Travis Christofferson changed my world, about three years ago when I was introduced to to his work and introduced to all the work that Siegfried and Otto Warburg did up to that point, I was still, I thought that cancer was a genetic disease.

So if anybody is still confused about the nature of cancer, starting with Travis's book, Travis Christofferson's Tripping over the Truth is a great introduction into what I think is cutting edge research and a paradigm about how to think about cancer, and how to deal with cancer once if we want to eradicate it.

I don't know what your experiences with with his work, doc, but that that work literally transformed my thinking in my world. Yeah. No, it's it's it's such powerful, powerful work.

powerful information. And and what I love to kind of add is that, you know, our mentality is, you know, we have kind of like this, this war on cancer where we go on attack and we kill, kill, kill, and we just want to destroy.

And and we don't understand that it's impossible to kill and destroy everything, you know. So then we need to then create and and support regulatory mechanisms and yeah, within the, the individual.

And that is when we can then bring in, you know these kind of natural agent to support these regulatory mechanisms. Because if, if we don't have them there, you know, after we've done all the kill, kill, kill, whatever is remaining is then going to just do its own thing because there are no borders, there are no checkpoints.

there's no immune system. There's no all of that is is not there because we've kind of destroyed the field. And that's why bringing, you know, doing more of that integrative approach where you marry the systems, becomes such a, such an important aspect in your care plan.

All right. I couldn't, that was beautifully said. You know, there's the dysregulation at the cellular level. Then there's also the dysregulation in the microbiome.

And, which has this huge impact on cell cycle regulation and how the microbiome interacts with our own biology. it all comes together into a one, a holistic approach that people can take hold of.

that we've seen make a huge difference in patient outcomes. Yeah. Love it. Well, Adam, thank you so much for the the powerful work you're doing for the, the science you're bringing forth, you know, that we can all benefit from and for making, the work for someone like myself so much easier.

as I work with patients. So thank you so much. Yeah, glad to help. And glad to connect with any clinicians that are interested in learning more about our work.