

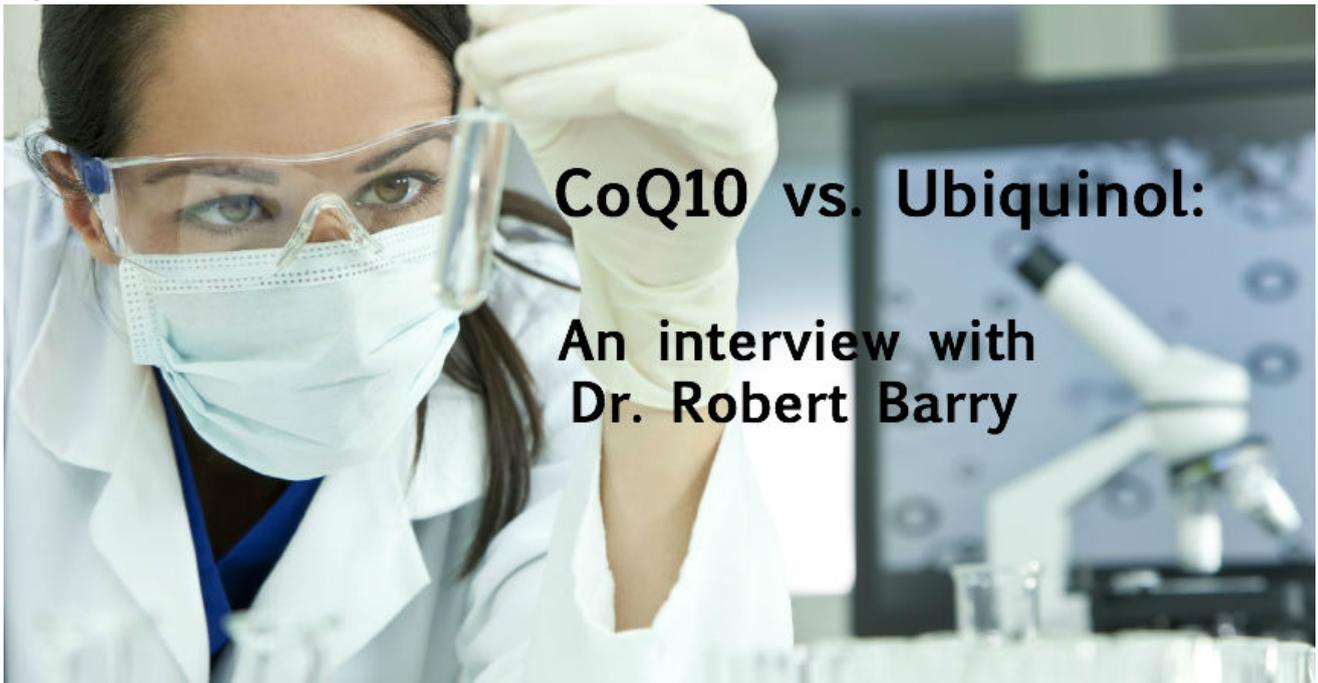


# CoQ10 vs Ubiquinol: An Interview with Dr. Robert Barry, PhD

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By: [John Jarmul](#) 12/06/2013



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CoQ10 vs Ubiquinol: An Interview with Dr. Robert Barry, PhD

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## Radio Transcript

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**Steve Lankford:**

Welcome back to Science Based Nutrition Podcast. I'm your host Steve Lankford, thanks for joining me, I'm glad you're here. This is going to be an interesting conversation, this is one I've been interested in for a long time, and that's the subject of CoQ10. This is one of those nutrients that a lot of people know about; a lot of people are interested in it. So, we decided to go to the source, the company that manufactures CoQ10 and talk to some of their resources. In this case, it's Dr. Robert Barry. He is the director of U.S. Affairs for Kaneka; Kaneka is a company that makes a very interesting form of CoQ10. The one that I believe most people should be taking, but we will find out more about that today in our interview. I'm pleased to introduce to you Dr. Robert Barry, Dr. Barry Welcome.

**Dr. Robert Barry:**

Well Thanks for having me

**Steve Lankford:**

I appreciate you taking the time; I've been interested in this particular nutrient ever since I first heard about it. Before we get into that subject though, tell our listeners a little bit about your background, your history, and how it is that you've gotten involved with Kaneka and CoQ10.

**Dr. Robert Barry:**

I'm the director of scientific affairs of Kaneka U.S. and what I do is address the development and implementation of clinical trials throughout the U.S. in major medical centers. I have a PHD, my PHD is in Chemistry and Bio Chemistry and I did my post-doctoral at Harvard and was also a staff researcher at Harvard for about 18 years. In molecular pharmacology and biological chemistry, was a staff member during that time, I did quite a bit of work on pre radicals and metabolic systems, biological systems and actually worked with CoQ10 as long ago as fifteen years. I was introduced to Kaneka over a decade ago when they asked me to come down and talk with them, and that's when they were first looking at that new form which is called Ubiquinol.

**Steve Lankford:**

Well what kind of a company is Kaneka, is CoQ10 their main focus, or what are their broader interests as well?

**Dr. Robert Barry:**

Kaneka is scientifically based company; they've been around since I believe last 1940's. They have several divisions including a food division, a plastics division, an electronics, and a life science division. The life science division is split up into medical devices, pharmaceutical intermediates, and of course nutraceuticals. Kaneka is the largest manufacturer of CoQ10 in the world. They were the first to introduce it commercially almost forty years ago.

**Steve Lankford:**

Well that's quite a history and quite a legacy, so certainly you are the right person to talk to. Let's talk about CoQ10 and its role in human nutrition, and why is CoQ10 so important.

**Dr. Robert Barry:**

Because of its metabolic function. First of all it's present in nearly every cell tissue and organ in our body. We actually biosynthesize coenzyme Q10 and it has a number of metabolic functions but probably those that are most focused on is its role in energy production and also as a very strong lethisiable antioxidant for cellular protection.

**Steve Lankford:**

Tell us a little bit about what these functions are in terms of energy production.

**Dr. Robert Barry:**

On a daily basis even if you're sedentary everything that's going on in every cell of your body metabolically requires energy exchange. So the mitochondria is our house of the cell actually produces up to ninety five percent of the APT which is the fuel for the development in energy in our systems. CoQ10 is actually one of the critical components in the production of ATP in the mitochondria. That's why it's called CoQ10; it's an electron transferring agent in what's called the electron transport chain in mitochondria. It literally shuffles electrons from what's called complex one to complex two to complex three, in this particular chain is critical in its production of ATP in every cell in our body. So if you have low levels of CoQ10 that means you probably have an energy deficit. Ubiquinol isn't nice to have its critical.

**Steve Lankford:**

Why would people be low in CoQ10? What are some of the factors that would influence those levels?

**Dr. Robert Barry:**

Actually I'm glad you brought that up because that brings to life the new form of CoQ10 that you eluted to in your introduction and it's called Ubiquinol. With conventional coenzyme Q10 and that's what I will call the CoQ10 that has been on the market of at least the last thirty years and by the way is one of the top sellers as a natural product for that time period that's never wavered, and for good reason it works. There is thousands and thousands of publications that have been produced and publicized on CoQ10 and its

health benefits and I should add by the way at least 99.9 percent of those studies were done with Kaneka CoQ10. The difference is that Ubiquinol the new form that has come out is what's called the reduced or electron rich form of CoQ10; it was introduced in 2006 commercially. The reason it wasn't introduced before 2006 is that this reduced form, and when I say reduced it means it is electron rich is very sensitive to light and air so that oxidizes readily. So, it wasn't mean to be put into pills and soft gels like conventional coenzyme Q10, the oxidized form what I'm calling conventional coenzyme Q10 is what most people have been familiar with the past thirty year and have bought at their local health stores. One of the things we have found out is that the active form in the body is actually being reduced electron rich form. You can use conventional coenzyme Q10 because it's actually regenerated in our body. The copy out is that if that was constant and consistent and efficient through our life time than conventional oxidized coenzyme Q10 as a supplement would be just fine. But what we've learned since Ubiquinol has been made commercially available and by the way I should add is commercially available not as just a supplement but available through researchers, and there is a lot of research that is being conducted with Ubiquinol and has been for the past decade, so we are kind of catching up with the publications that have been done on conventional coenzyme Q10, but we learned is that as we age, consistency and efficiency of the conversion of the oxidized is the act of reduced form in our system, not just in our system, in any aerobic cellular system diminishes with age. So that necessarily effects the production of energy with in this aerobic cellular systems including our body, to the point with aging, just normal aging, as well as with acute and chronic disease, therefore with the efficiency with the conversion of the oxidized electron routes of the reduced form diminishes significantly and what has been found in a number of studies is that the health benefit that we have seen in the thirty or forty years with conventional coenzyme Q10 or within subjects that still have relatively efficient conversion rates. We didn't know that then, we know that now to the point to where people are familiar with the publications and health benefits of CoQ10 have seen a large number of positive studies but there are also a significant number of studies that have been on offence that have been neutral , and we didn't quite duplicate those previous studies. There were two reasons for that; one was that the doses were very low at that time that was administered so that didn't help. Critically the difference was and specifically was that they were not able to convert. The body wasn't able to convert the oxidized conventional CoQ10 to the active form as efficiently, and so that's why we see some of the differences in some of those studies that have come out, the reason we can say that is now when we go back and duplicate those studies, we find that, especially with critically ill people or older individuals, no matter how much conventional coenzyme Q10 was administered, and I'll give you some examples later from some clinical files if I have enough time, it really didn't make a difference. But when they were giving Ubiquinol, the electron rich reduced form, significant health benefits relating to significant differences in clinical outcome in a very good way were observed.

#### **Steve Lankford:**

Let me see if I've got it right, the original form of CoQ10 is Ubiquinone and when that was used in the studies that had to be converted by the body into Ubiquinol in order to actually do what CoQ10 does. But there are limitations to be able to convert that to one form to the other, and you've mentioned age, and disease, as being two of the limiting factors, and so as we get older, or as we have illnesses our ability to convert the Ubiquinone into Ubiquinol is compromised and therefore we can't appropriate the value

of CoQ10. Did I get that right?

**Dr. Robert Barry:**

That is very good. In fact, one of the measure of that, or one way to translate this is that efficiency of conversion is usually is very good, up to our early to mid- twenties, and in fact if you were to measure the plasma levels of total CoQ10 in healthier individuals who are say twenty five years of age or younger, ninety three to ninety five percent of CoQ10 in their plasma would be the Ubiquinol form, it's that specific. After that age, going on these are even healthy individuals, as you get into your thirties and forties that ratio changes, in fact the ratio of Ubiquinol and CoQ10 is now considered a formal marker of aging it's also considered directly associated with age related disease.

**Steve Lankford:**

So that would suggest that all of us as we age are going to need Ubiquinol and we are not going to make as much of it and we've shown through these studies that supplementing is an effective way of increasing the Ubiquinol levels, is that correct?

**Dr. Robert Barry:**

Very much so, and not just in terms of energy deficits and regaining optimized levels, also for cellular protection, as I mentioned earlier, the very important aspect is, is that it is the most powerful liposolables antioxidant in our systems and when that's depleted you open the cells up to significant oxidized damaged to lipoproteins and even DNA.

**Steve Lankford:**

When you say a lipid cellular protector does that mean that CoQ10 has a specific benefit to those fats in the body or the fats that we consume, or prevents oxidation, what are those benefits?

**Dr. Robert Barry:**

When I say lipidsolables that literally is water soluble, an antioxidant, such as vitamin C. More like vitamin E, Vitamin E is a lipidsoluable antioxidant that means it works in that cellular compartment. For instance, Ubiquinol is functional in maintaining cellular membranes. It's important for them to retain their fluidity for metabolic function, which is like your skin gets thinner and thinner, a little more brittle as you age , and that what happens with cells as well, it helps it in terms of metabolic function at the membrane level, in addition to the compartment, for instance, where it resides and the electron transport chain resides and the mitochondrial go in the inner hydrophobic core, which is a lipidsoluable environment and a lot of the biochemistry that goes on as you might imagine, at the cellular level is in that particular compartment. In fact, one of the things I should mention is that, it's such a powerful antioxidant that it regenerates vitamin e and vitamin, aerobic cellular systems and antibodies.

**Steve Lankford:**

You mentioned it's one of the top selling nutrients going back for decades and there's good reason for that, there's compelling science about the benefits of CoQ10 and you're involved in some of that science, you said that ninety some percent of the research is done with the Kaneka brand of CoQ10. Let's look at just a few of those compelling studies that give us evidence of the benefits of this important nutrient.

**Dr. Robert Barry:**

Let me give you two examples, one of the early studies that were actually conducted before it was made commercially available. We have given Ubiquinol to a cardiologist group to take a look at it to see what they thought. This is a cardiology that is familiar with conventional coenzyme Q10 with the Ubiquinone, so we gave them Ubiquinol. As I mentioned this particular cardiologist who was familiar with coenzyme Q10, so these patients were actually receiving Coenzyme Q10 to begin with, but when we first gave them Ubiquinol, you might imagine over the years that a number of companies come out and say well they have the next generation, of the newest thing in terms of CoQ10, so they were a little weary about it, to convince themselves that it was worth subjecting their patients to therapeutic evaluation with Ubiquinol. So what they actually did was use it on some healthy individuals first, and these are healthy individuals in forties and fifties that they have already followed for about a two to three year period who are taking conventional coenzyme Q10 and what they were following were their plasma levels. What they had found was that the highest plasma level that they could get with conventional Coenzyme Q10, and remember this is over a two year period, is 2.5 micrograms per mill and most of them were lower than that, what's significant about that number is they find therapeutically they really don't see a clinical effect in their type of patient unless its 3.5 or above, so what they did was switch the exact same cohort, using Ubiquinol, same dose, instead of conventional coenzyme Q10, with in a two to three month period the plasma levels doubled to tripled, something that hadn't happened in the three year period with conventional coenzyme Q10. In addition, they also were able to obtain plasma levels with about a third of the dose. Then they went up to higher levels and this was seen in published studies also, with conventional coenzyme Q10 at a dose and this was for experimental means, you really don't need that dose on a daily basis.

They found up to 900 milligrams of conventional coenzyme Q10, they were able to get up to levels three to four micro grams per mill, which is pretty good, but then they also found that just using just a third of that, 300 milligrams of Ubiquinol to get plasma levels that were six to eight micrograms per mill. So significantly, in terms of bioavailability they saw levels that they weren't seeing at with conventional coenzyme Q10, they convinced themselves that it was worthwhile to at least go ahead and try it on some of their patients first. So I'll just give you a couple of examples. This is all published by the way in reviewed scientific journals. Again these are fairly compromised patients on a rather rigorous therapeutic regimen. What was nice about the study was that as I mentioned before that the patient is already on conventional coenzyme Q10. So all they did was substitute to that, all the other therapeutics remain, so the only variables which is convention coenzyme Q10 to Ubiquinol to the reduced form of CoQ10. They used a number of different biomarkers to begin with but one of the major ones was the ejection fraction and just to familiarize your listeners to the ejection fraction is the volume of blood that is pumped with one beat of the heart. So it's a measure of the strength of the heart and the volume that's being pumped and for normal adults. Normal healthy adults, that's typically around

sixty to sixty five percent again, for normal healthy adults. For this particular sixty five year old patient his ejection fraction was fifteen percent. So you can imagine, fairly compromised. So they switch from ubiquinone, conventional coenzyme Q10, to Ubiquinol, within a three month period, his plasma levels went from 1.6 microgram per mil to over 5.6 micrograms per mil. More importantly was the ejection fraction; it went from that fifteen percent to thirty to forty percent within a three month period. Within a six month period it was up to fifty percent. So of course they went on to try with a number of other patients and found, basically got with some variation, essentially the same type of result, and they continue to do so since then. They wrote a letter to Kaneka, and this was before again, before it was even commercially available, and thought that this was a, they considered that was a major breakthrough, medically and scientifically, and further studies have been published on since. But what they proved to us that Kaneka was that, we really had the tiger by the tail, we expected it to be a little different, but it was significantly different, especially in terms of metabolically impact entusiological effect.

**Steve Lankford:**

It's an impressive result that you've seen.

**Dr. Robert Barry:**

Very much so. There are dozens, and dozens, of studies that are being conducted throughout the U.S., these are all in major medical centers, Harvard, Cornell, Columbia, Stanford, and you name it, The Mao Clinic children's hospital. And, it's only been available since 2006. The two things that I can say that have been very consistent since then, one is based on some of the examples I gave earlier, in every study that has been published today, Ubiquinol shows a higher level of absorbance and bioavailability, and it depends on the age and the health state of the individual, and so in some cases, if you are young and healthy, that difference is small, but the older you get it is very significant. In addition to that, in every study today with Ubiquinol, and all of these are either a direct or indirect comparison of conventional coenzyme Q10. The health benefit has been also significantly and tangentially better. Again in some cases very small and other cases such as the example I just gave quite significant.

**Steve Lankford:**

Let's talk briefly about some of the other benefits of CQ10. Tell us a little but more about some significant results that you've seen.

**Dr. Robert Barry:**

What's coming out is Ubiquinol is probably the form that should be taken.

**Steve Lankford:**

People might have limited use of the ubiquinone because of age possibly health condition, so it would make sense, if you're going to take it take the one that has been shown to be most absorbable.

**Dr. Robert Barry:**

Absolutely.

**Steve Lankford:**

Are there any contraindications or warnings for CoQ10? A lot of people are interested in it, is there anybody that should know more about it because of a health condition?

**Dr. Robert Barry:**

Well actually, in terms of safety, it has an unbeatable safety record. As long as CoQ10 has been on the market, there are no known drug interactions or adverse effects. One of the questions that always comes up, many of these patients are on blood thinning medications, such as Premarin, Warfarin, same thing and always asked about that. Actually, the best way to address that is a common thing, for people who are on premarin or blood thinners to be taking CoQ10 or Ubiquinol. Your physician or health care provider necessarily has to monitor that therapeutic regimen to begin with. You should always tell your health care provider any other medication supplements and that type of thing you're taking. But there is no other specific alarm for CoQ10 or Ubiquinol any more so than there is for anything else that is in your diet.

**Steve Lankford:**

Are there recommended dosage ranges that the average person can consider if they are looking at Ubiquinol, what kind of a range would be reasonable for them to consider?

**Dr. Robert Barry:**

There is a couple published studies actually on this, I was looking at that, and what the studies have shown is that, if you're not taking any form of CoQ10 at all presently and would like to start with Ubiquinol. They found if you were to take two to three hundred milligrams per day for two to three weeks, plasma levels would plateau out, and about one hundred milligrams maintenance dose after that is fine to maintain that level. About 100 milligrams per day for a healthy individual, I know a lot of people that take more than that, and are healthy and those that are compromised as well probably take a little bit higher dose. But again with the safety record for CoQ10 it's really not an issue.

**Steve Lankford:**

And it's something we are always going to suggest. If you're under a doctor's care, talk to your doctor about these things and get his opinion, get his agreement to watch you if you're adding this CoQ10, but certainly work with your physician and discuss with him the value of these very important nutrients.

**Dr. Robert Barry:**

Absolutely, there's a few websites, actually there is a short period of time and there's a lot of information on Ubiquinol and one in particular that is pretty good is called:

Ubiquinol.org

**Steve Lankford:**

So this is a website Ubiquinol.org, and what will people find there?

**Dr. Robert Barry:**

They'll find not only the history of it, they will be able to clinical trials, clinical trials that are on there, I think there's a question, answer part on there. Also, information in terms of dosaging, which is mentioned. And also, brands that carry it, I should mention that Kaneka makes the pure Ubiquinol material. Kaneka does not sell to the consumer. Different brands buy the sure material and then put it into soft gels and sell it. So, we don't have that commercial interest that the brands do, so we take more of a scientific focus in it.

**Steve Lankford:**

Well that's exactly why we wanted to talk to you, we are very big fans of what I call trademark branded clinically studied raw materials, and this fits that category. This is one of the unique forms of CoQ10, has a lot of science behind it, people can learn its benefits though that science and we suggest and urge them to do that. And the suggestion is if you want the results that are shown in the studies; use the product that was used in the studies.

**Dr. Robert Barry:**

There is a Kaneka logo that's typically on the bottle that carries Kaneka material and by the way Kaneka was the first and largest producer of conventional coenzyme Q10, but they are the only producer of Ubiquinol. There's also a Wikipedia on Ubiquinol, and it's actually very good.

**Steve Lankford:**

This elocution into the form is stable, and the form that is used by the body is such a great advancement. Ever since I first learned about this I've been most interested in it.

**Dr. Robert Barry:**

There's a lot of that we didn't cover, like working with the clinical investigators, it's really exciting for me they've seen some very interesting results, all positive. And this has gone in areas we didn't get close to. Today they are being studied specifically at Harvard Medical School that I never anticipated for Ubiquinol, but maybe in the near future can cover those types of topics.

**Steve Lankford:**

I would very much love to; I'm always at your disposal, so by all means I would be happy to do that any time you want.

**Dr. Robert Barry:**

Ok, well good, as I mentioned in the interview there are a number of studies that are being concluded now. Which means they will be going through the review of data unblinding the studies, and should be published, or at least submitted for publication by that time.

**Steve Lankford:**

I will put that in my notes, and I will look forward to touching base with you in 2014.

**Dr. Robert Barry:**

Ok, very good, I enjoyed it, thanks for having me.

**Steve Lankford:**

Thank you so much Dr. Robert Barry from Kaneka, take care bye bye.

If you would like more information on Ubiquinol CoQ10, I have a couple of resources for you. Certainly you can go to the doctor's best website, drbvitamins.com, type in Ubiquinol, or even the first few letters and you'll come up with the references for the Ubiquinol products offered by Doctor's best. And there you can read the ingredients, the benefits, the features, there's a printable, downloadable PDF that has the references and all of the other information for you. So, Doctor's Best maintains a lot of information about the individual products on their website so certainly go there and get that information. As mentioned in the interview you can also go to the website ubiquinol.org, and there you can read about some of the clinical studies, they have a blog there, where they discuss some of the current science and issues, and so there's a lot of information for consumers. You can learn a lot about this nutrient; certainly in today's interview you heard some very compelling reasons why you should consider Ubiquinol as being your type of CoQ10. It is my opinion that if you can get the best, you should go with that. Getting better results is what we are all about, and looking at the evolution of the science leads us to finding these better products, which ultimately are going to give us better results, and that's what we are looking for. Well that's it for me we are all out of time. I've got to go, I'll be back next week with another interesting Science Based Nutrition Podcast, I hope you'll join me, until then, make it a good week. I'm your host, Steve Lankford, thanks for being here, bye bye.

**Closing:**

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## Author: John Jarmul

John Jarmul is the Marketing Manager for the Nutrients Division at Kaneka. He



is an expert on heart health and a contributor to multiple medical related blogs. John lives in Houston, TX.

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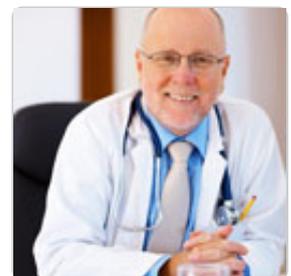


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