

# Pseudocatalase for vitiligo and gray hair

Questions about this document should be emailed to [pseudocatalase@gmail.com](mailto:pseudocatalase@gmail.com)

We've been getting many questions about our products, and about the use of pseudocatalase to treat gray hair and vitiligo. This document is intended to answer those questions. But first, some background. I have vitiligo. My research on treatments led me to the work of Dr. Karin Schallreuter, PhD, and pseudocatalase. Dr. Schallreuter has spent most of the last two decades working out the details on how pseudocatalase can be used to treat vitiligo. I purchased some commercial pseudocatalase cream, but I felt the cost was excessive, and I was unconvinced that I had the most efficacious treatments. So, my colleague and I read Dr. Schallreuter's papers and patents, and formulated her most active pseudocatalase formulation. Then, we proceeded to find cream and shampoo carriers that would not react with the pseudocatalase, which would allow the product to be used in a simple skin cream or shampoo. We developed these products to be the best pseudocatalase products readily available, so that we could use them ourselves. These are the products I sell.

Pseudocatalase acts to disproportionate hydrogen peroxide, or turn it into oxygen and water. Disproportionation is its only role in treatment. For this reason, we recommend to anyone using any pseudocatalase product to test it. Place one drop of the product on a clean flat surface. Place one drop of hydrogen peroxide over half of the product. Bubbling, which indicates reaction, should occur on the half of the product with the hydrogen peroxide. This bubbling happens within 2 minutes for our shampoo, and 10 minutes for the cream.

People have asked about purchasing our pre-mixed products in cream or shampoos, and whether that will reduce the half-life of our products. We have witnessed 4-5 months without any degradation, at the longest time points with which we have any experience. Dr. Schallreuter claims the pseudocatalase we use is stable for more than a year. The real answer, of course, is to use the simple test we outline in the paragraph above. We recommend using the product in the cream or shampoo because it guarantees the integrity of the product in use. A real risk in using the powdered form is that the cream or shampoo you choose may react with the pseudocatalase. Most carriers you would choose will react, and the pseudocatalase will become inactive before it reaches your skin. Our interest is providing a product with the greatest chance of disproportionating the hydrogen peroxide in your skin and hair follicles, and we are certain our cream and shampoo will retain the pseudocatalase activity for many months after purchase. We regularly use and test it ourselves. If you find our cream or shampoo lost its efficacy in disproportionating hydrogen peroxide, please contact us. We will make sure you perform a good test of its activity. If it has lost its activity, we would like you to send the remaining product back to us for testing and possible replacement.

People have asked about why we recommend rinsing out the gray hair shampoo formula after five minutes. Dr. Schallreuter has convincingly shown that her pseudocatalase reacts with hydrogen peroxide in the skin to completion within five minutes. After this time point, rinsing the product out carries little risk. We see clear repigmentation in our subjects with gray hair using this protocol. It is still too early to say how complete this repigmentation will become, but our users are quite happy about it.

To use our vitiligo cream, apply the cream to the affected skin regions, or to larger skin areas, twice per day. Some UV exposure is also beneficial, especially in the 311 nm wavelength range.

To use our shampoo, apply to scalp or other skin region containing gray hair, and massage shampoo into the skin containing the hair follicles. Allow to sit for five minutes. Then you may follow with your normal hair cleaning/conditioning program. Apply at least once per day.

For both vitiligo and gray hair, the first signs of repigmentation occur in 6-8 weeks. We anticipate near complete repigmentation will require 6-8 months.

Other questions and answers.

*Is there a suggested maintenance frequency once desired results are reached? Every other day?*

The shampoo is unexplored territory. Hair tends to go gray slowly, over many months, in most people, and it also tends to repigment slowly. Use once per day should continue to achieve the same effects. For vitiligo, similar caveats apply. Vitiligo patients have undergone complete repigmentation and stopped treatment, only to find that many years pass before pigment loss occurs again. Others may require continual use. In any case, the loss of pigment is a clear indicator that treatment should be re-started. The pseudocatalase works to stop pigment loss very quickly, within 1-2 days. The restoration of previously lost pigment is, in contrast, a very slow process.

*Do I need to shake the shampoo before each use?*

The shampoo should not require continual shaking. The products mix fully with the surfactants in the shampoo.

*My discoloration is only on my hands, so would this work for me or not? Please let me know*

The pigmentation process requires pigmented hair follicles in the local region. When you start treatment, the hair follicles will generate the pigmenting cells that will later migrate to the skin. The non-hairy portions of skin on the hand will therefore take a very long time to re-pigment. The backs of the hands, which have hair follicles, will restore pigment at the same rate as other body parts. I have a spot about the size of a quarter on the underside of my right wrist at the base of the hand and have seen no results to date, unfortunately.

*So in other words since the discoloration is to the tip of my fingers, close to the finger nails, it would not work?*

According to the science underlying vitiligo, the repigmentation speed depends on the distance from the hair follicles. The middle of the finger tip, in the non-hairy skin, will be difficult to repigment. The backs of the fingertips, near the nail, should be quite a bit better. Areas that are almost impossible to repigment are on the bottom of the hands (non-hairy skin, near the wrist) because there are no follicles nearby. This applies to my wrist as well, but may just require an extended treatment time.

*I am a depo-melanin user and I am thinking to switch to a pseudocatalase shampoo, which I think would be easier to add in my routine. I saw your shampoo is a bit expensive so, I'd like to know how long would it last and also how can I be sure that the active doesn't get rinsed off with the shampoo? Thank you for your time*

The length of time the shampoo will last will vary quite a bit, as people vary quite a bit in how much shampoo they use per rinse. Our current users will go through a 250 mL/8 ounce bottle in about 3 months, or close to \$0.50 per use. The active ingredient is very reactive, and we do not anticipate that it will remain active much more than the 5 minutes for which we recommend it be used. In other words, five minutes is enough to get rid of a lot of the available hydrogen peroxide in the scalp, and waiting longer is unlikely to provide additional benefit. If you wanted to get rid of more hydrogen peroxide, you could use more frequently. However, our current users are seeing clearly visible repigmentation using once per day. We chose a shampoo carrier after experimenting with scalp tonics (we have not tried Depo Melanin, though), because we felt a shampoo carrier would mesh with people's daily schedule a little easier.