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ACell Interview with Dr. Gary Hitzig

Because of its unique ability to heal a variety of full-thickness wounds with no visible scarring, many people in the hair transplant community have been inquiring about the use of [ACell MatriStem](#) products during hair restoration procedures.

[This](#) recent press release from Dr. Jerry Cooley and Dr. Gary Hitzig indicated that the ECM products developed by ACell, Inc. might indeed be very effective for this purpose. In order to address the growing skepticism/excitement regarding ACell's ability to heal donor scars and regenerate donor hair, Dr. Gary Hitzig was kind enough to grant an exclusive interview to explain the procedure.

How long have you been experimenting with ACell's MatriStem products?

Since September 2008, when the FDA approved it for use.

How many patients have you treated?

The initial cohort I treated was between 18 and 20 people. I am currently writing a scientific article based on the results from this group; explaining the rationale behind the unique regenerative process we've observed. Once all of the documentation has been organized and all of the patient follow-ups have been completed, the research will be sent to ACell for verification of claims. Publication should follow shortly thereafter.

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In regards to ACell, what applications have you tested thus far?

Scar reductions, plucked hair duplication, recipient injections, virgin scalp donor regeneration and a new gel formulation.

Can you expand upon any of these applications for our readers?

Plucked hair duplication involves extracting a hair shaft from an intact follicle and using the DNA present in the bulb of that shaft to regenerate an entirely new follicle. When the plucked hair shaft is re-inserted into the scalp in combination with ACell, we can elicit a new hair growth that cycles normally and is cosmetically acceptable. This is a slightly modified version of a previous "auto-cloning" technique that has had inconsistent results to date.

Recipient injections occur during hair transplants. We place grafts in a fashion consistent with normal hair restoration procedures, but we also inject a liquid suspension of ACell into the recipient area. Using this method, we have been able to increase hair counts from 50-400%. That means that in the best case scenario, we can get 4 follicles for every 1 that is implanted.

We are also working on a gel that can be injected in between existing hairs for this same purpose. However, it is too early to say whether or not this procedure will ultimately be successful.

How effective is auto-cloning when ACell is used? Is it possible for a complete hair transplant surgery to be conducted with only plucked hair follicles? If not, is it

practical to assume that auto-cloning could be used as an adjunct to “thicken up” a previous transplant?

I don't know. It would be quite tedious. It is more practical to do a transplant first, and then increase density with injections. This would be more ideal. I should note that this is still experimental, however.

Has the company been supportive of this process?

Yes, ACell has been extremely helpful during this stage of research and experimentation. The company understands that if we knew the answer to every question, we wouldn't be sitting here trying to figure it all out. Research starts with learning.

Think of it like this: Was Follicular Unit Extraction effective at first? No, it had its share of pros and cons. But these things are only really realized over time.

Of course it would be preferable to carry out these studies in secret, but we recognize that some people are really deeply affected by the scarring associated with prior hair transplant procedures. Like anyone else, I don't want to give people sub-par results and I don't want to let people down with false hopes. Nevertheless, I also don't want to keep this a secret if it can potentially help a large population of people. In choosing this path, I also chose to take personal responsibility for all of the criticism that manifests. I'm fine with that.

Having said this, expectations MUST BE OBJECTIVE. We have very clear consent forms. We do not recruit people that expect something we cannot provide. We are trying our best, and we do have very promising preliminary results. But, like they say, “prior successes are not an indication of future results.” Wound healing and regeneration is quite a variable process. ACell understands this, we understand this, and our patients understand this.

Why do you think this process works?

This is something I plan on extrapolating upon with the current article I'm working on.

It's pretty technical, but I can summarize it like this: Essentially, all tissue has an extracellular matrix (ECM). I like to call it “mother nature's biological scaffold.” It's a production of a chemical that each tissue possesses for its specific phenotype. ECM is the primary tool for cellular attachment, production and final differentiation of tissue.

Certain areas of the body (like the bladder and small intestine) have a much higher concentrated and evolved form of ECM. Also, only certain organs have a basement membrane along with their ECM. This basement membrane is critical for healing after wound injury. It plays an important role in remodeling tissue during the healing process. ACell provides this “scaffolding” to areas of the body that are obviously not able to regenerate themselves.

To reconstruct new tissue you need three things: 1) Cells, 2) scaffolds and 3) bioactive molecules. ACell's proprietary ECM provides all of these and organizes the migration and final differentiation of epidermal cells. “Line up, differentiate, prevent the default (scar tissue).”

After the host cells are recruited, the scaffold gets broken apart and disintegrated, then the new stem cells migrate to the area and replace it with new, host-derived tissue. This has already been demonstrated in many human and animal studies. More recently, it's been quite successful at repair and subsequent reconstruction of dermal structures in hundreds of thousands of patients.