



## A conversation with the collagen experts at Geistlich Pharma.



Collagen plays an important role in the regeneration of tissue. This is why Geistlich Pharma has devoted itself to Collagen Expertise.

Eleven scientists working at Geistlich Pharma have dedicated themselves exclusively to collagen research.

Dr. Lothar Schlösser, Niklaus Stiefel and Daniel Suppiger have advanced the company's 163 years of collagen expertise with their work, as they have developed innovative biomaterials for tissue regeneration.

**Niklaus Stiefel says: “We optimize our products on the one hand for the sake of the body’s cells, and on the other hand to make them easier for dentists to use.”**



**Dr. Schlösser, collagen performs so many different functions in the body. Is it also the same for the collagen in Geistlich biomaterials?**

**Dr. Schlösser:** It certainly is. The Geistlich Bio-Gide® collagen membrane is a good example. The dense collagen of the upper layer acts as a dividing wall between a bone graft and the soft-tissue. The lower layer has a more open structure in comparison. It adheres well to the tissue, allows cells to colonize and contains fibers that serve as “guiding templates” for somatic cells. Although these are very different properties, Geistlich Collagen has them all.

**How can one modify a protein so that it has either this or that property?**

**N. Stiefel:** Many people think that it has something to do with which one of the 30 different types of collagen one uses, but in fact it is a question of the original tissue and how it is processed. It’s like when you are looking for a house. You can either buy a complete, ready built detached house, or you can buy the individual bricks and assemble something completely new.

**And which approach does Geistlich use?**

**Dr. Schlösser:** Both strategies have a role to play for us. Some of our products, for example, if they should be strong to retain sutures, contain native organized collagen tissue obtained using a gentle preparation process. In other cases we have designed our collagen tissue completely from scratch using natural collagen components in order to obtain a specific effect, for example, to achieve good volume stability when healing.

**Is the competition doing the same thing?**

**Dr. Schlösser:** Other membranes are frequently assembled from collagen components, but in order to make them strong for suture retention, they must be chemically cross-linked, which can compromise the biology and healing response, which is exactly what we don’t want!

**How do the cells react when you alter the collagen?**

**D. Suppiger:** That is the crucial question for our cell laboratory. We continually optimize our collagen products until the right cells do what we want them to: mucosal cells, bone cells, cartilage cells, etc.

And to go back to the analogy of houses for a moment, after doing the cell tests, we can really say: here’s the nursery, there’s the living room and that’s the cellar, i.e., testing particular “rooms” to make sure they “attract” the right cells.





Daniel Suppiger and Dr. Lothar Schlösser are quite certain:  
**“Collagen products must be made in such a way that cells  
can behave naturally in them.”**

**How would you complete the sentence:  
“When a clinician uses Geistlich  
collagen membranes or matrices he can be  
sure that...”**

**N. Stiefel:** ...the outcome is predictable, that no surprises will occur, and that he will be able to send his patient home happy. That’s why we do our research: to push for successful outcomes, no matter how experienced a clinician might be.

**How can this be guaranteed?**

**D. Suppiger:** A large part of our work consists of optimizing the handling of a product without compromising its proper effect on cells. Our focus is on the clinician from the very beginning. What’s important to the dentist or dental specialist? Does the product have to create volume? Must it be easily hydrated? For the requirement analysis, we work together with many clinicians around the world, from top surgeons to less experienced dentists.

**Dr. Schlösser:** And we test the prototypes in the same way, of course. Finally, we always have animal cadaver models in the lab so that in-house and external specialists can test how the new products perform in use.

**One last question: What is a collagen  
researcher’s dream?**

**N. Stiefel:** In principle, all tissue can be regenerated using the right collagen. It really would be a dream come true to be able to facilitate this: to be able to help cells so that they themselves can regenerate tissue that has been lost or destroyed, like skin, heart or liver tissue. In this regard, we hope to “turn back the clock” – to encourage tissues to regenerate to their former, healthy states.



**For More Information on  
Geistlich Collagen Expertise,  
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