Exosomes Europe by informa

November 4-5 2025
Amsterdam Marriott Hotel
Amsterdam, Netherlands

Speaker Stories

A Conversation with Bernd Giebel on the Future of Exosome Therapeutics

Bernd Giebel, Professor of Translational Extracellular Vesicle Research, University Hospital Essen & Co-Founder, Exosla

Could you introduce yourself, your academic background, and your company's mission in the exosome space?

My name is Bernd Giebel. Currently, I'm a professor of translational extracellular vesicle research at the University Hospital Essen in Germany. I trained as a biologist and worked with stem cells for many years. In 2009, we started our hands-on journey with extracellular vesicles (EVs), and we're specifically interested in mesenchymal stromal cell (MSC)-derived EVs. In 2011, we successfully treated a treatment-refractory graft-versus-host disease patient.

Due to this success, we envisioned translating MSC-EVs into the clinic. We faced several challenges, such as characterisation at the functional and metric level, which we improved academically. To overcome heterogeneity, we established an immortalisation strategy and clonal expansion of the EV-producing MSCs for more homogeneous production. After learning that they retain their potency, we thought a better strategy would be to translate them into the clinic via a company. We acquired venture capital and founded the company Exosla. Our intention now is to secure the necessary funding to proceed, and, in parallel, we continue to develop the field further academically.

What was the pivotal moment or discovery that sparked your personal interest in EVs?

It happened differently than you might think... I originally studied neuroblasts. When I switched to the stem cell field, working with haematopoietic stem cells, I was searching for a way to combine my research areas. Neuroblasts divide asymmetrically, and it was said that haematopoietic stem cells also divide asymmetrically, so that was the common denominator. A long journey started to screen for asymmetrically segregating proteins in dividing haematopoietic stem progenitor cells.

After a very long time, we identified CD63 and CD53, among others. Both are tetraspanins and are known as exosome markers—this must have been around 2005. I started to read about exosomes and became extremely fascinated. Then, intending to track living asymmetric cell division, we cloned CD63-EGFP and, by chance, we saw that the cells released green vesicles. That was the entry point in 2009 into hands-on EV research.

From your perspective, what is the single biggest hurdle that the EV field must overcome to realise its full potential?

It's indeed the robustness of the process. On one hand, we learned from the MSC field that there is a lot of inter-donor variability and heterogeneity, as well as ageing. This is what we also observe, and therefore we immortalise and expand at the clonal level to bypass the big challenge of inter-donor heterogeneity. Now, the hurdle is the medium. We have massively improved our quality control, maybe far beyond the average, and we see that with some chemically defined media, EV secretion collapses. We are now trying to find a chemically defined medium that is permissive for EV release. That is the largest hurdle at the moment. In principle, downstream processing is well-established and we can adjust it, but the upstream process is the most difficult.

So, do you think the biggest breakthrough will be when that process is made more robust and ironed out?

No, I don't think a single breakthrough in processing will be the transformative moment, because many products are already in the clinic. It may be that we are more aware of certain challenges because we have such elaborate quality control, while others who don't see these issues yet are stepping ahead. If you look at the MSC space, people stepped into different traps over the years, and we are trying to learn from that history and not make the same mistakes. It took 25 years for the first authorisation in the United States. Perhaps the biggest 'breakthrough' will be learning from the past and applying a more critical, quality-focused approach from the start.

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Without giving too much away, what is the key takeaway you hope the audience will get from your presentation at Exosomes Europe?

The key takeaway is that quality matters. We need high-quality control, and we perform single-EV analysis, which is a next-generation analytic tool that provides us with much more insight than conventional methods. My intention is to sensitise people to the current challenges and provide our own strategies for how we can solve them. We are still in the process, but I think it's worth investing the time and effort because, once the process has been established, the potency is tremendous. It will be a game-changing therapy for many different diseases.

What are you most looking forward to at the meeting in Amsterdam?

You have an excellent selection of speakers, and I'm happy to meet and discuss with them—many are good friends already. For me, this is a new format. Typically, we are at stem cell congresses or in the EV-specific world. Having people from industry and bioengineering here, learning more about scaled manufacturing and devices, and meeting a new group of people with skills complementary to ours is exciting. I want to get connected, bring the EV space into this world, and profit from that world. I think that is the next step to move towards clinical translation.

Exosla will be joining us at Exosomes Europe this November in Amsterdam. Register Now.