The Future of Transdermal and Microneedle Drug Delivery according to Ester Caffarel-Salvador, LEO Pharma A/S

SMi Reports: In preparation for the Inaugural Transdermal and Microneedle Drug Delivery Conference we hear from LEO Pharma

Transdermal and Microneedle Conference 2022

LONDON, UNITED KINGDOM, November 24, 2021 / EINPresswire.com/ -- Dr. Ester Caffarel-Salvador is a multidisciplinary scientist with a background in biotechnology and biochemistry. She was recognized by the MIT technology review with the Innovators under 35 award in 2019 and the Nova Talent award in 2021. As a postdoc in Professor Robert Langer's laboratory at MIT, she developed a novel pill design to administer insulin and other macro-molecules via oral delivery in collaboration with Novo Nordisk.

Dr. Caffarel-Salvador is now an Associate Director of Regenerative Medicine at LEO Pharma. She is passionate about advocating on career development for women in science and is an advisor and mentor at various academic and entrepreneurial programs, both locally and internationally.

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>
> *Ester Caffarel-Salvador, LEO Pharma A/S*

Speaker Interview:

The transdermal and microneedle market has matured greatly over recent years, what key differences have you noticed in the last year regarding significant developments?

“When I started working in the field, microneedles were mainly used for transdermal applications. Nowadays, they are being utilized for drug delivery throughout the body, even in oral devices to target organs within the gastrointestinal tract. In particular, there was a

microneedle-based oral device that entered clinical trial within the last year."

What are your thoughts on moving away from needle-based delivery, do you think we will be able to deliver vaccines in this way in the near future?

"The route of administration has a direct impact on the patient adherence to a given therapy and, therefore, clinical and commercial success. Offering vaccines in the form of a microneedle patch would lead to higher vaccination rates by not only capturing the population with needle phobia but also potentially offering vaccination solutions to developing countries. Several companies are progressing into clinical trials to test microneedle patches for this purpose, so the future is looking bright."

Microneedle patches are a popular area of research currently, what do you believe are the most important factors to consider when designing a microneedle patch? Do you believe we should be focusing on dissolvable patches?

"There is no "one-size-fits-all" for microneedle patches and it is important to understand the patient diversity and not put all the patients in the same bucket. The design of the patch depends on many factors, including the site of application and the drug to be delivered. These factors put a constraint on fabrication parameters, such as the length of the microneedles, the size of the patch needed, or the most suitable fabrication method.

Dissolvable patches pose a notable advantage compared to metal microneedles by obviating sharp waste, however, their drug loading capacity is limited. As researchers devise new ways to increase loading capacity, translating the dissolving microneedles systems to the market remains a challenge in the field because achieving consistent drug exposure levels in clinical studies has proven to be difficult. Reproducibility is key for microneedles to succeed."

What current hot topic will you be addressing in your presentation and what would you say makes it relevant to 2022?

"With the increasing number of microneedle-inspired oral devices in development and clinical trials that show success in delivering macromolecules orally, it is to be expected that the prevalence of oral devices in the clinic will increase in the upcoming years.
For this reason, my talk will be aimed at discussing the key challenges of delivering macromolecules in the gastrointestinal tract and how the use of microneedles in oral drug delivery devices can help circumvent such challenges."

Where do you think the biggest growth area will be over the next year and how would you like to see the market developing in the future?

"Breakthroughs in regenerative medicine have come at a fast pace in the last few years, so I would expect to see substantial growth in the investigation of microneedle applications in this

space. I can envision further work into this area as well as more microneedle-based oral devices progressing into clinical trials.
In the future, I would like to see more progress in microneedle drug loading capacity, reproducibility of drug exposure, and skin residence for sustained drug release."

The Conference:
SMi Group is proud to present the inaugural Transdermal and Microneedle Drug Delivery Conference, taking place on the 24th to 25th January 2022, in London, UK. The Conference will explore real world applications of microneedles in drug delivery and strategies for device design while engaging in the latest innovations in device design and formulation with case studies from thought leaders.

The conference will also consider key developments in the transdermal drug delivery field, including the innovations in microneedle technology for a COVID-19 vaccine and opportunities for development in cancer vaccine delivery, advances in microarray patches, and microneedle-based diagnostics. Key regulatory updates including guidance on classification of microneedle devices and considerations for ensuring quality will be presented by regulatory experts for a comprehensive outlook of this exciting and ever-growing field, and the importance of considering human factors in order to enhance the user experience will be presented by industry experts.

This two-day agenda offers you peer-to-peer networking with leaders in transdermal and microneedle delivery. A saving of £100 is available for bookings made before 30th November 2020. Visit the website here: www.transdermal-microneedle-delivery.co.uk/EINnews

Sponsors of the conference include: LTS Lohmann Therapie-Systeme AG, QuadMedicine

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