

Foto: Josefina Pinon Hofbauer and Daniela S. Andrei

Engineered Models of Human Disease, organized by Nature Conferences and held in Belgrade, Serbia, on 28–29 October 2025.

The meeting highlighted the rapidly growing importance of engineered human disease models, particularly human-derived organoids and organ-on-chip systems, as powerful tools for investigating disease mechanisms and therapeutic responses. A strong and recurring message throughout the conference was the shift toward more physiologically relevant in vitro models that can complement and, in some cases, replace traditional animal models in preclinical research.

Food and Drug Administration (FDA) is increasingly prioritizing and requiring the use of organ-on-chip and advanced in vitro platforms alongside animal data, reflecting their improved predictive power for human outcomes. This regulatory push further reinforces the role of engineered human models as essential intermediates between basic research and clinical application.

Several contributions were directly aligned with our research focus, especially those involving three-dimensional (3D) models of skin and carcinomas. Compared to conventional two-dimensional cultures, 3D engineered skin models were shown to better reproduce tissue architecture, tumor–microenvironment interactions, and therapeutic responses.

Within this context, a poster entitled “**Statin-Based Therapeutics in Skin Cancer: Insights from 2D and 3D Models.**” was presented by Daniela Stoica-Andrei. The work fitted well with the overall conference themes by illustrating how model dimensionality and microenvironmental cues impact drug responses in skin cancer.

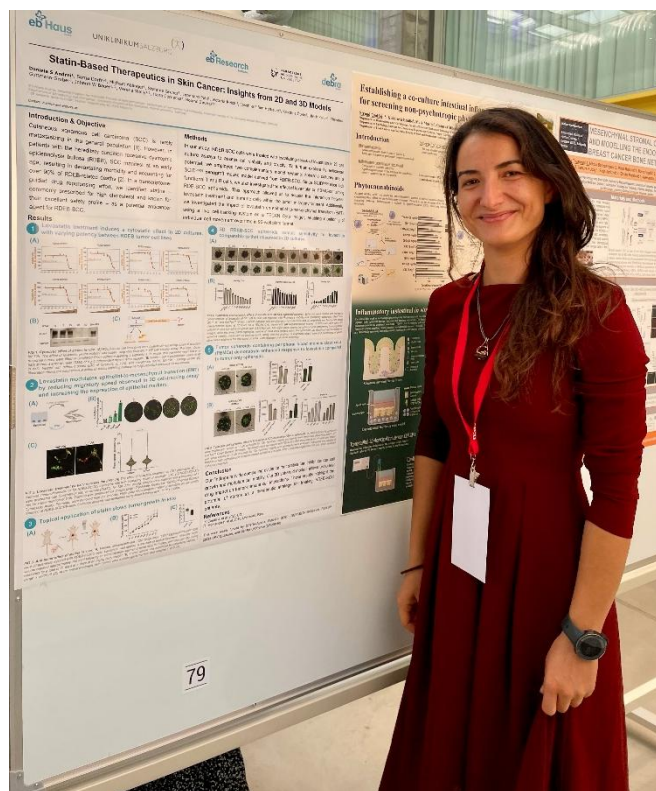


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