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**Artificial intelligence convergence hyper-personalized skin regeneration 3D bioprinting technology****Jeehee Kim***Rokit Healthcare Inc, Republic of Korea*

To confirm the efficacy of the new treatment technology using a novel 3D-bioprinting, we performed 6 clinical studies of 100 patients with Wagner Grade 1-2 of non-healing diabetic foot ulcers (DFUs) and 20 patients with 2nd to 3rd-degree burns. In this longitudinal study, 111 DFU patients enrolled; 63% were in the test group. As a new indication trial, 20 burn patients enrolled. After wound debridement, the wound area was detected with AI software which converts the image into a file and sends it directly to 3D-bioprinter Dr. INVIVO (ROKIT Healthcare, Korea). Autologous adipose tissue was harvested from the patient's abdomen by liposuction and micronized immediately. With a 3D bioprinter, the personalized adipose patch was manufactured in the operating room (OR) and applied to the wound. After a single treatment, patients received standardized offloading and non-adherent gauze dressing for patients. They were followed up to 12 weeks of healing. We conducted 6 clinical studies of DFUs in five countries, India, Korea, Turkiye, the USA, and Malaysia. The complete wound healed rate at week 12 shows 87% in ROKIT's treatment group, compared to 38% in conventional treatment. All test group patients represent the acceleration of epithelialization with >70% of wound healed rate. Especially, Burn clinical results showed epithelialization within 4 weeks conducted in Turkiye. A new treatment method is tailored to patients with chronic diseases that are difficult. The convergence between cell biology, AI-detecting, and 3D-bioprinting technologies represents a potential paradigm shift in customized care for chronic skin disease. Through clinical studies results, transplantation of adipose-derived pluripotent cells is feasible through transplantation of autologous fat, enabling treatment without side effects. This technology is an advanced treatment with the aim of a personalized-specific treatment method and is promising for usability as a replacement for standard wound care.

**Biography**

Dr. Jeehee Kim from ROKIT Healthcare is the chief technology officer and strategic business unit president leading the Hyper-Personalized Skin Regeneration. Jeehee Kim has her Ph.D. in Stem Cell Biology from the Ludwig-Maximilian University of Munich in Germany and had prior experience at the Yale University School of Medicine Stem Cell Center doing research in stem cell & iPS cells. Dr. Kim also has a Master of Science in Dental Science from Seoul National University.