



News Release

First Patient Dosed in Ground-Breaking First-in-Human mRNA Trial for Knee Osteoarthritis

Tokyo, Japan / Adelaide, Australia – 2 March 2026 — Nano Holdings, Inc. (TSE Growth Market 4571, Chairman, President and CEO Atsushi Matsumura) today announced a major clinical and strategic milestone with the successful dosing of the first patient in its Phase 1 first-in-human (FIH) trial of RUNX1 mRNA for the treatment of knee osteoarthritis (OA). The study is being conducted by its Australian local entity, PrimRNA AU Pty Ltd, marking a pivotal step in advancing a potentially revolutionary mRNA-based regenerative therapy. Completion of first patient dosing marks a significant milestone as the study transitions into full operational execution, with patient safety and rigorous clinical evaluation as key objectives.

Strength of Cross-Border Collaboration

The trial represents the world's first intra-articular administration of an mRNA therapeutic directly into the knee joint for osteoarthritis. RUNX1 mRNA is designed to stimulate regenerative pathways within cartilage, addressing the underlying disease process rather than only symptoms.

The study is being undertaken at Royal Adelaide Hospital and co-ordinated by Beyond Drug Development Pty Ltd, reflects a strong Australia-Japan collaboration that combines clinical excellence, operational expertise and innovative science. The successful initiation of dosing reflects close collaboration between the Japanese and Australian teams and establishment of a robust clinical infrastructure and adaptive operational model to support efficient progression of the trial.



Photo (from left to right):

- Daisuke Nakashima, President & CEO, PrimRNA Inc.
- Associate Professor Boopalan Ramasamy, Principal Investigator for the Australian trial (Royal Adelaide Hospital)
- Augustine Horman, Study Coordinator (Royal Adelaide Hospital)
- Amy Choi PhD, MBA, Resident Director, PrimRNA AU Pty, Ltd
- Kenichiro Naito PhD, Director, PrimRNA Inc.

**About RUNX1 mRNA**

RUNX1 mRNA is designed to stimulate regenerative pathways within cartilage, addressing the underlying disease process rather than only symptoms.

About Osteoarthritis

Osteoarthritis (OA) is one of the most significant causes of disability worldwide, more than 600 million people globally are living with OA, with knee OA representing the largest proportion of cases. The current standard treatments are symptomatic medications only with use of NSAIDs (non-steroidal anti-inflammatory drugs) and injections (steroid, hyaluronic acid). In absence of disease-modifying treatments, OA progresses to severe stages requiring total joint replacement surgery.

About Nano Holdings, Inc.

Nano Holdings is a value creation platform company at the core of the healthcare industry. We bring together globally active executives, scientists and investors to support the creation of businesses that gain worldwide recognition, while maximizing the potential value of technology. Our role is to establish a trajectory where Japanese-origin technologies receive their rightful recognition in the global market and achieve significant growth.

Investor and Media Contact

Nano Holdings, Inc.

Corporate Communication

<https://www.nano-hd.com/en>