NeurOssence

HKU Med
LKS Faculty of Medicine
Department of Orthopaedics & Traumatology
香港大學矯形及創傷外科學系

香 港 大 學
THE UNIVERSITY OF HONG KONG

HS2P-10

Injectable Hydrogel

Exploring the nerve–bone connection for localised bone regeneration

An investigational peptide–hydrogel platform

NeurOssence Bio Limited | Hong Kong

From research to regenerative innovation

NeurOssence Bio Limited is a Hong Kong biotechnology company translating research from the University of Hong Kong's Department of Orthopaedics and Traumatology into peptide-based approaches to bone regeneration.

Founded in 2025, we are developing the HS2P-10 injectable hydrogel for localised bone repair.



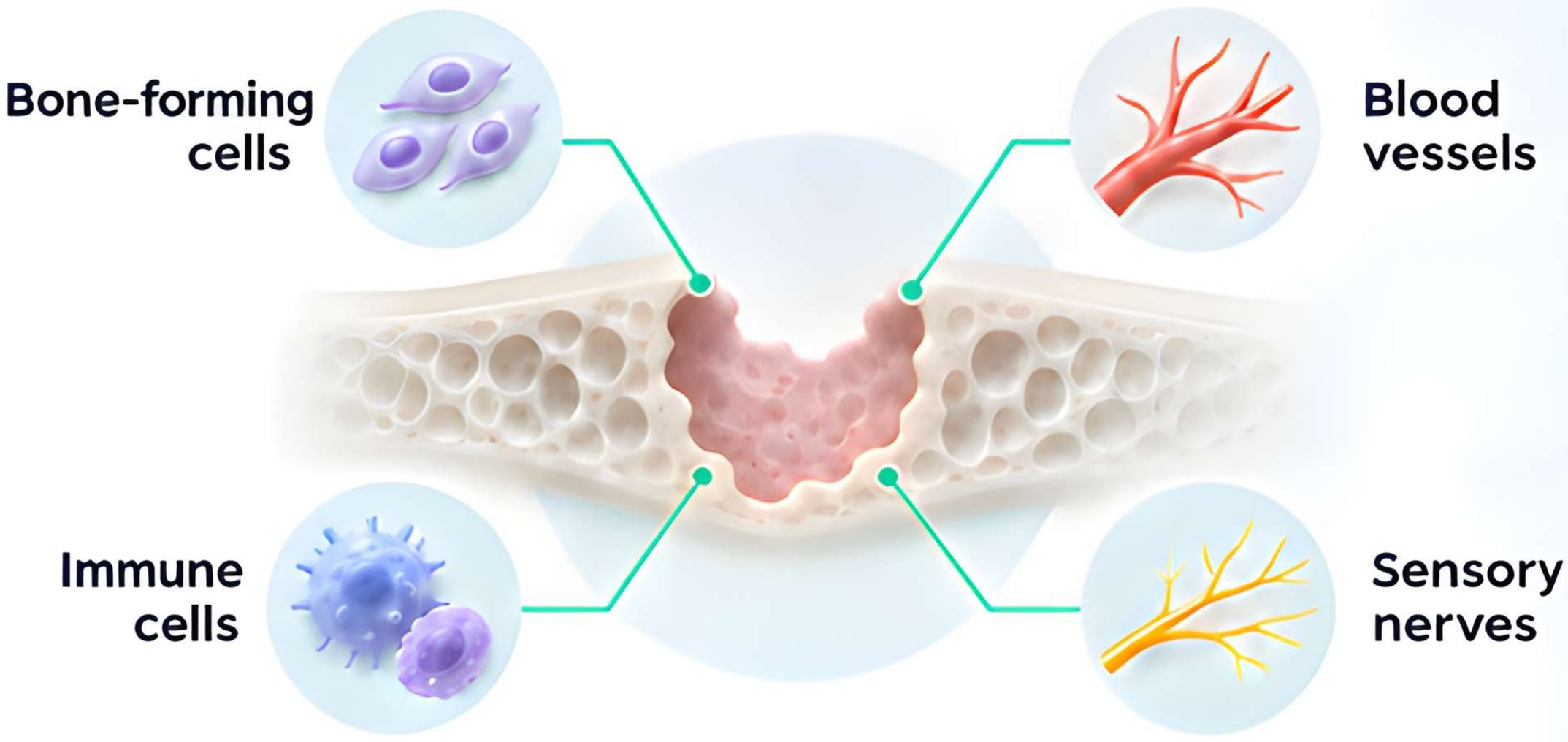
Patent information

US provisional patent application No. 63/371,229
PCT application No. PCT/CN2023/112211
World Intellectual Property Organization (WIPO): WO 2024/032713 A1
China National Phase patent application No. CN 119677768 A
US National phase patent No. US 2026/0049109 A1

Bone repair is a coordinated process

Bone healing involves more than bone-forming cells. Blood vessels, immune cells and sensory nerves also contribute to the bone repair microenvironment.

When healing is delayed or incomplete, new local approaches are needed to support bone repair.



Our question: Could a peptide-containing hydrogel modulate the nerve–bone axis to support the local bone repair microenvironment?

Local delivery. Regenerative potential.

HS2P-10 injectable hydrogel

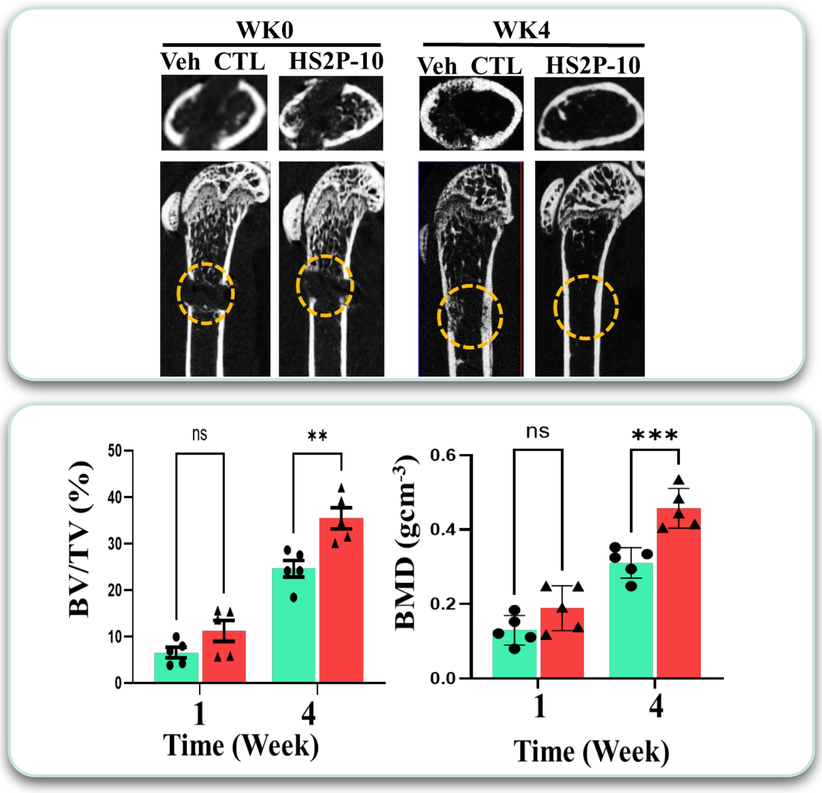
We are developing an injectable hydrogel incorporating HS2P-10 for local delivery at a bone injury site.



HS2P-10 peptide → Injectable hydrogel → Local delivery

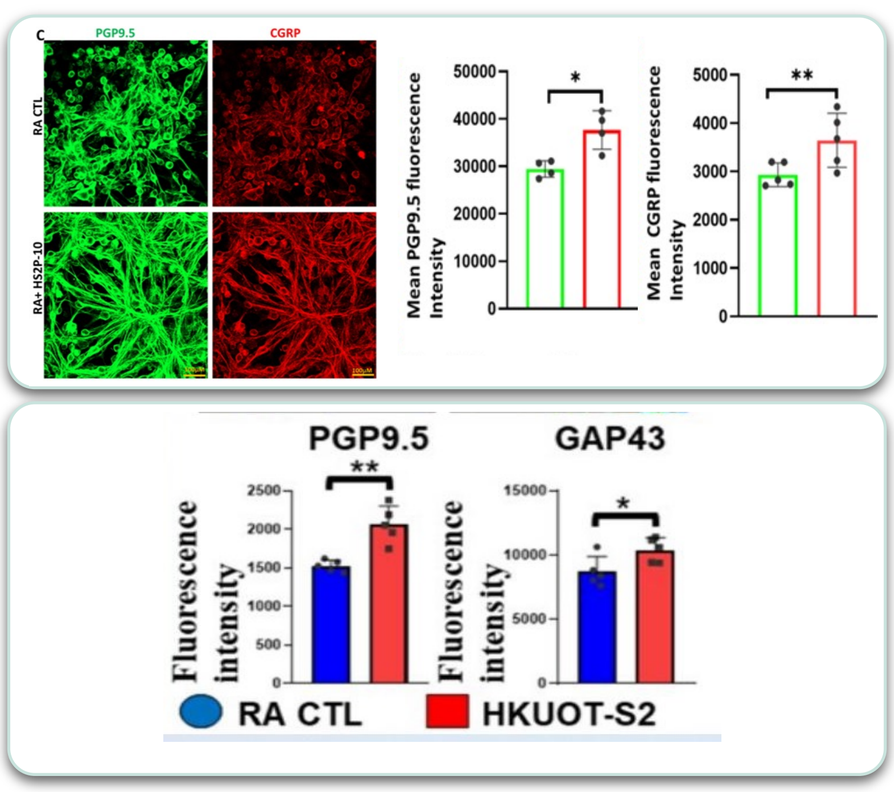
Preclinical research

HS2P-10 hydrogel promotes bone repair



Higher bone density (BV/TV & BMD)

HS2P-10 hydrogel promotes nerve functions



↑ PGP9.5 · CGRP · GAP43

Why the nerve–bone axis?

Bone contains sensory nerves that communicate with surrounding cells and participate in the response to injury.

Preclinical studies suggest sensory nerve signalling can contribute to bone repair.

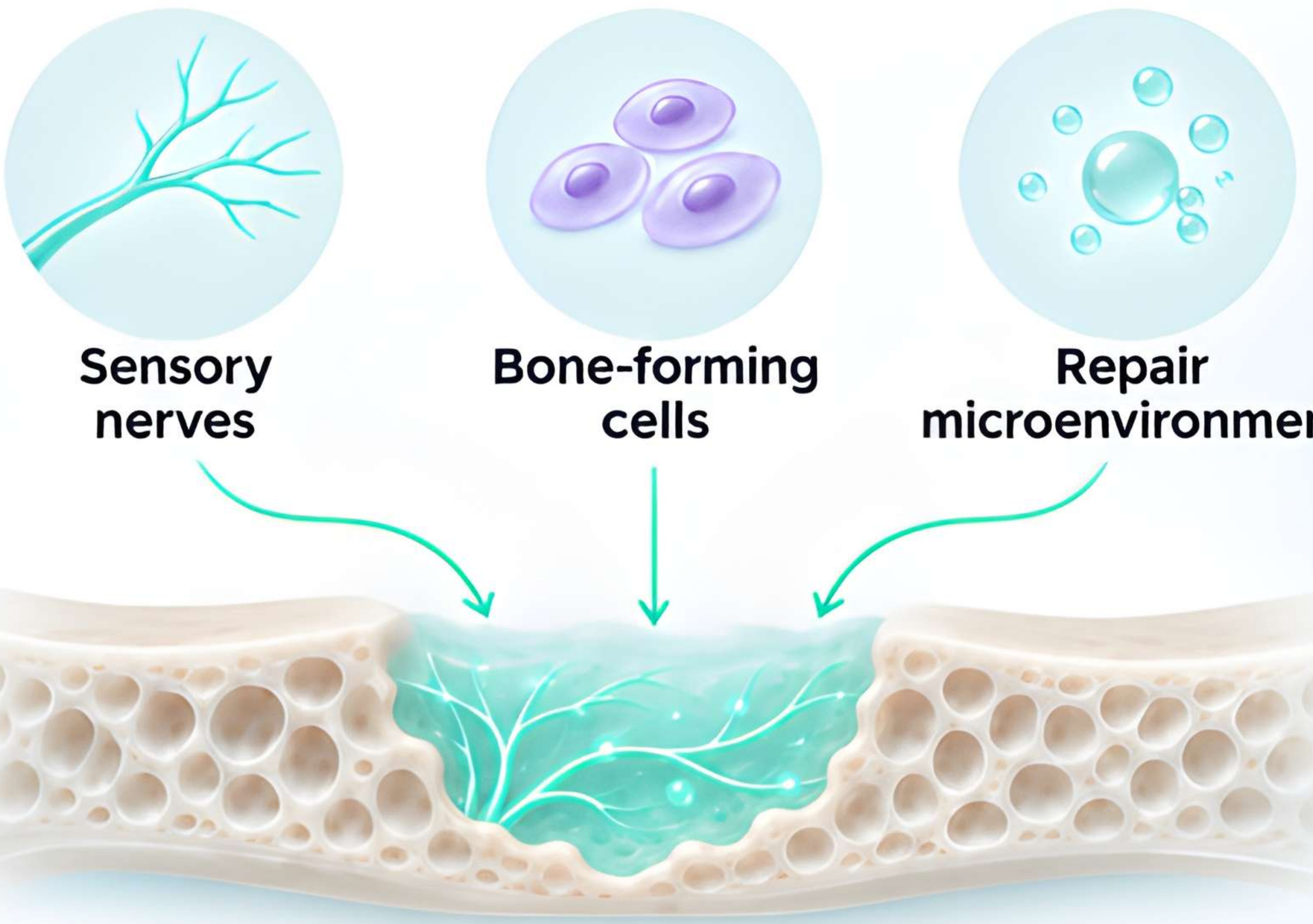
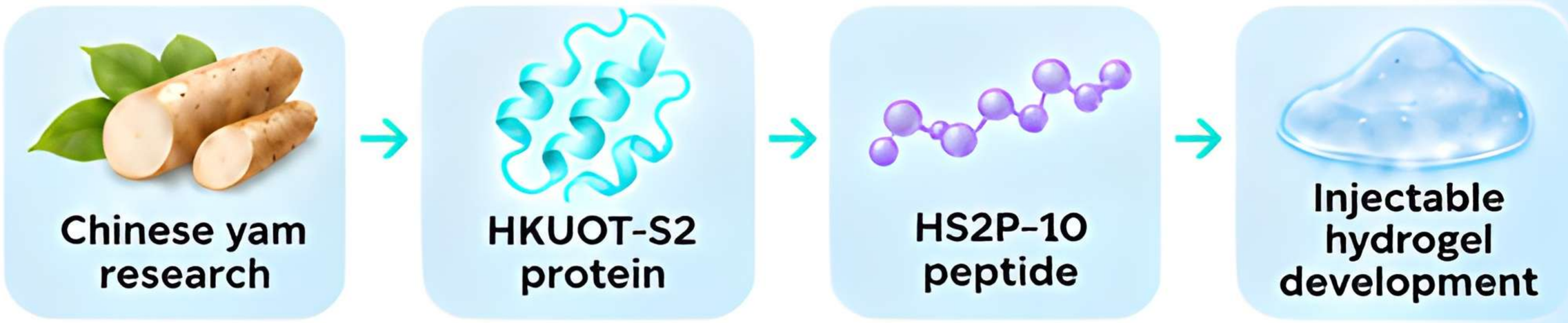


Illustration of the nerve–bone research rationale

Our research direction: exploring HS2P-10 in a neuro-osteogenic approach to bone repair.

From protein discovery to peptide innovation

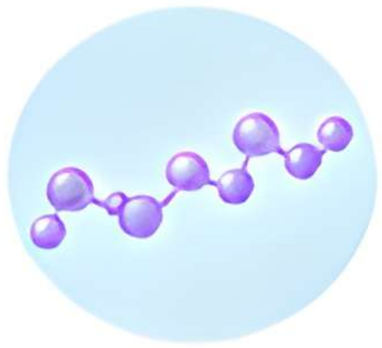
HS2P-10 is derived from HKUOT-S2, a protein identified from Chinese yam research.





Parent protein | HKUOT-S2

promoted bone defect repair in a preclinical animal model.



Derived peptide (HS2P-10)

An HKUOT-S2-derived functional peptide promotes bone mineralisation (the bricks) and type I collagen expression (the mesh) to facilitate bone repair.

Why develop the peptide?

- **Focused activity** — a smaller functional unit with neuro-osteogenic activity to promote bone fracture repair.
- **Reproducible synthesis** — a short peptide suitable for consistent chemical synthesis. DESIGN OPPORTUNITY
- **Formulation potential** — a candidate for local delivery in a hydrogel. FORMULATION OPPORTUNITY

Kubi et al. Bioactive Materials. 2023;27:429–446. doi:10.1016/j.bioactmat.2023.04.018

From research to translation

Our investigational hydrogel programme brings together science, product development and partnerships.



01

Formulation and characterisation

Define the hydrogel and its delivery properties.



02

Preclinical validation

Evaluate performance, biocompatibility and safety.



03

Manufacturing and quality

Develop reproducible processes and GMP scale-up.



04

Regulatory and clinical strategy

Explore market-specific regulatory and clinical development.

Let's advance bone repair together

We welcome conversations with partners across the development and commercialisation journey.

- **Orthopaedic devices and biomaterials**
- **Manufacturing and GMP scale-up**
- **Preclinical and clinical research**
- **Regulatory development**
- **Licensing and distribution**

Dr John Akrofi Kubi

Co-founder, CEO, and Board Director, NeurOssence Bio Limited

Research Assistant Professor, Department of Orthopaedics & Traumatology, HKU Med

kubijohn@hku.hk

Prof Kelvin Wai Kwok Yeung

Co-founder and Board Director, NeurOssence Bio Limited

Chair Professor and Director of Research, Department of Orthopaedics & Traumatology, HKU Med

wkkyeung@hku.hk

neurossencebio.com

Meet us at MEDICA 2026