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Extracellular Vesicles
Clinical application in orthopaedic diseases

Hydrogel Biomaterials
Pathological mechanisms of diabetic wound healing

Nanotube Arrays
Surface nanotopographies on cellular response

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Titanium dioxide nanotube array can be readily fabricated with controlled surface topography at the nanometre scale, which offers an ideal model scaffold to study how the surface topography and surface energy influence the cellular behaviours. This is reported by Monchupa Kingsak et al. in their Research Article on page 221.

Cover image: by Florence R. Wang

Biomaterials Translational is an international journal publishing research at the interface of translational medicine, biomaterials science and engineering. The journal publishes original, high-quality, peer-reviewed papers including original research articles, reviews, viewpoints and comments. Translational medicine is an interdisciplinary field that applies emerging new technologies and sciences to the prevention, diagnosis and treatment of human disease, with a particular focus on animal disease models in the application of biomaterials for treatments. Thus, the journal highlights breakthrough discoveries in basic science and clinical application of biomaterials, as well as other significant findings related to the translation of biomaterials.

The scope of the journal covers a wide range of physical, biological and chemical sciences that underpin the design of biomaterials and the clinical disciplines in which they are used.

Original articles will be considered for publication within, but not limited to, the following domains:

- Investigation of human biology and pathogenesis of diseases with potential applications of biomaterials in treatment
- Synthesis, characterization and biomedical potential of metallic, ceramic, polymeric, composite and hybrid biomaterials
- Physical, chemical, biological, pharmaceutical and toxicological features of biomaterials
- Drug and gene delivery system design, with a focus on its application to disease conditions
- Short-term and long-term biocompatibility of biomaterials
- *In vivo* disease models and the biology of the host response in application of novel biomaterials
- Biomaterials design for modern diagnosis and therapeutic clinical practice (bioimaging, biosensing, biotherapy)
- Stem cell–biomaterial-based tissue engineering

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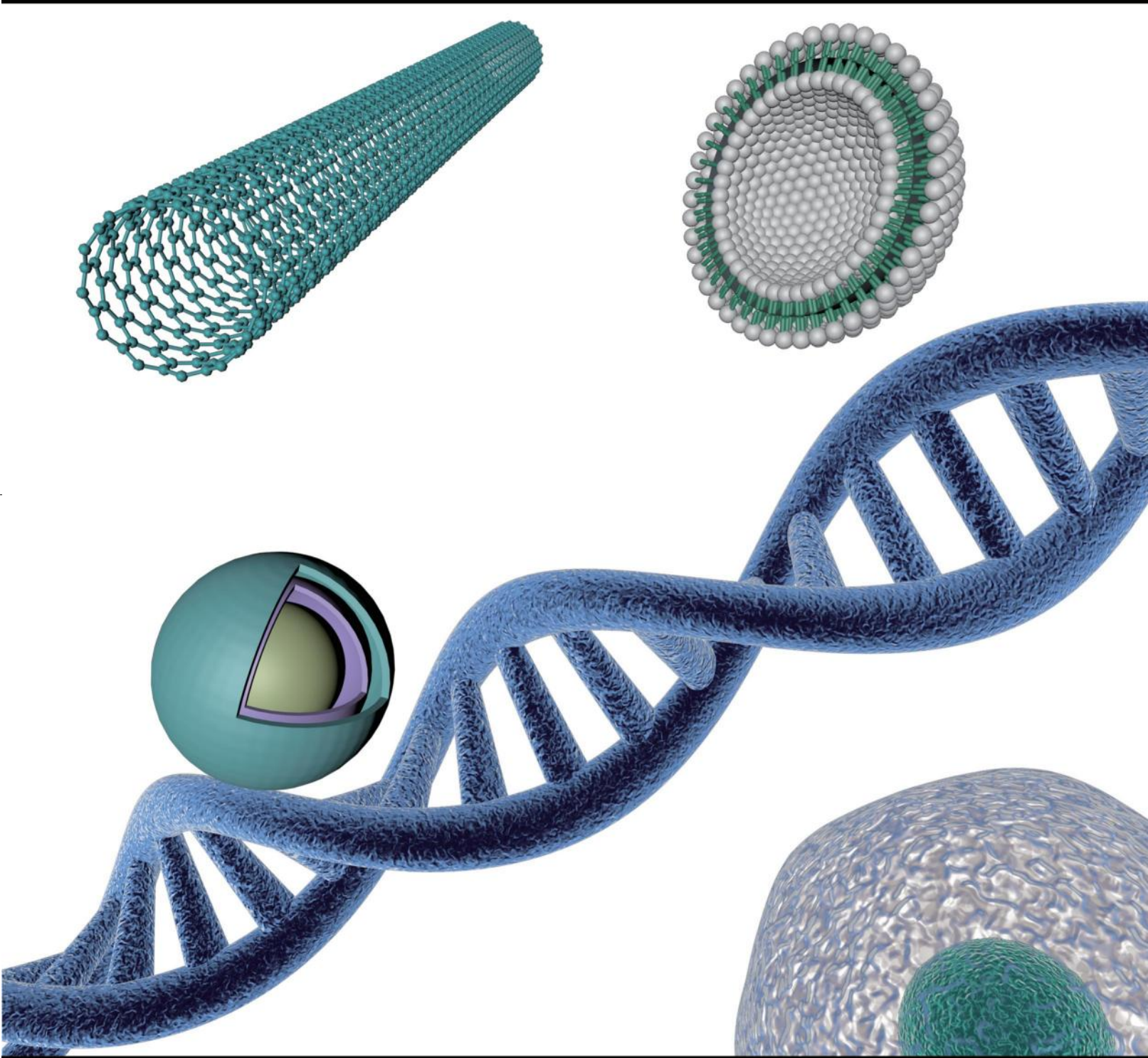

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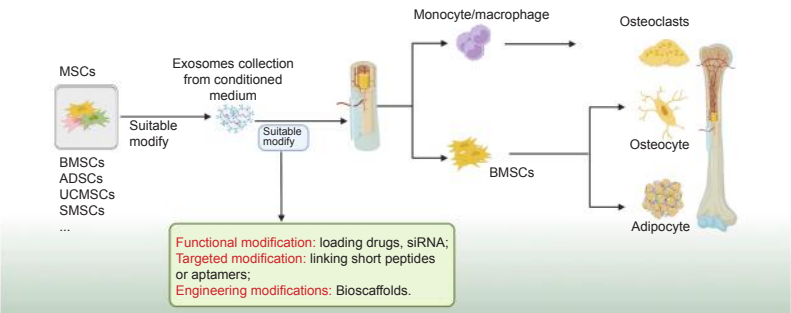
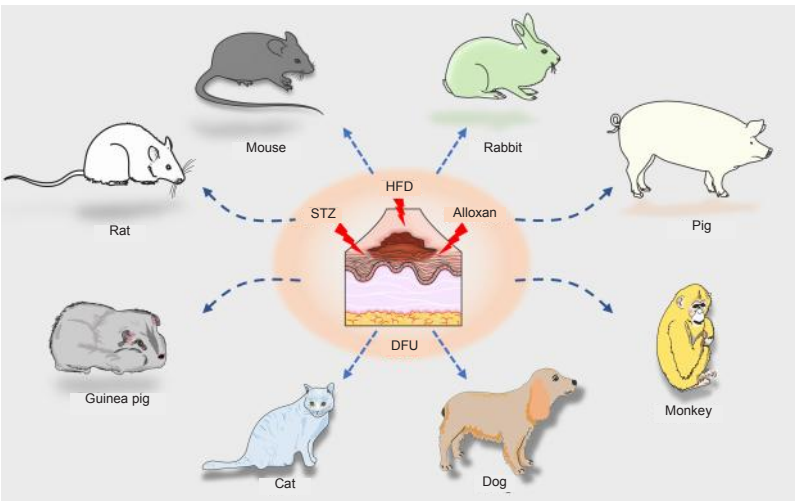
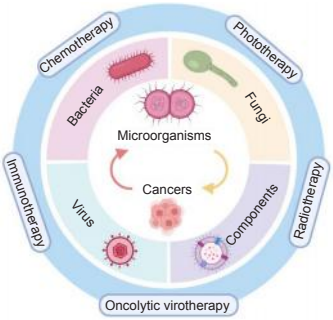


Mesenchymal stem cell-derived extracellular vesicles (MSC-EVs) have great prospects for application in orthopaedic diseases by transporting substances such as proteins, lipids, and nucleic acids. The use of modified MSC-EVs combined with materials science can realise cell-free treatment of bone diseases.



Diabetic wound models are induced in different animals including rat, mouse, rabbit, pig, monkey, dog, cat and guinea pig with streptozotocin (STZ), high-fat diet (HFD) and alloxan. These diabetic wound models were used can be simulated the physiological mechanism of diabetic wounds, which providing a theory for translational research in treating diabetic wound healing.



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