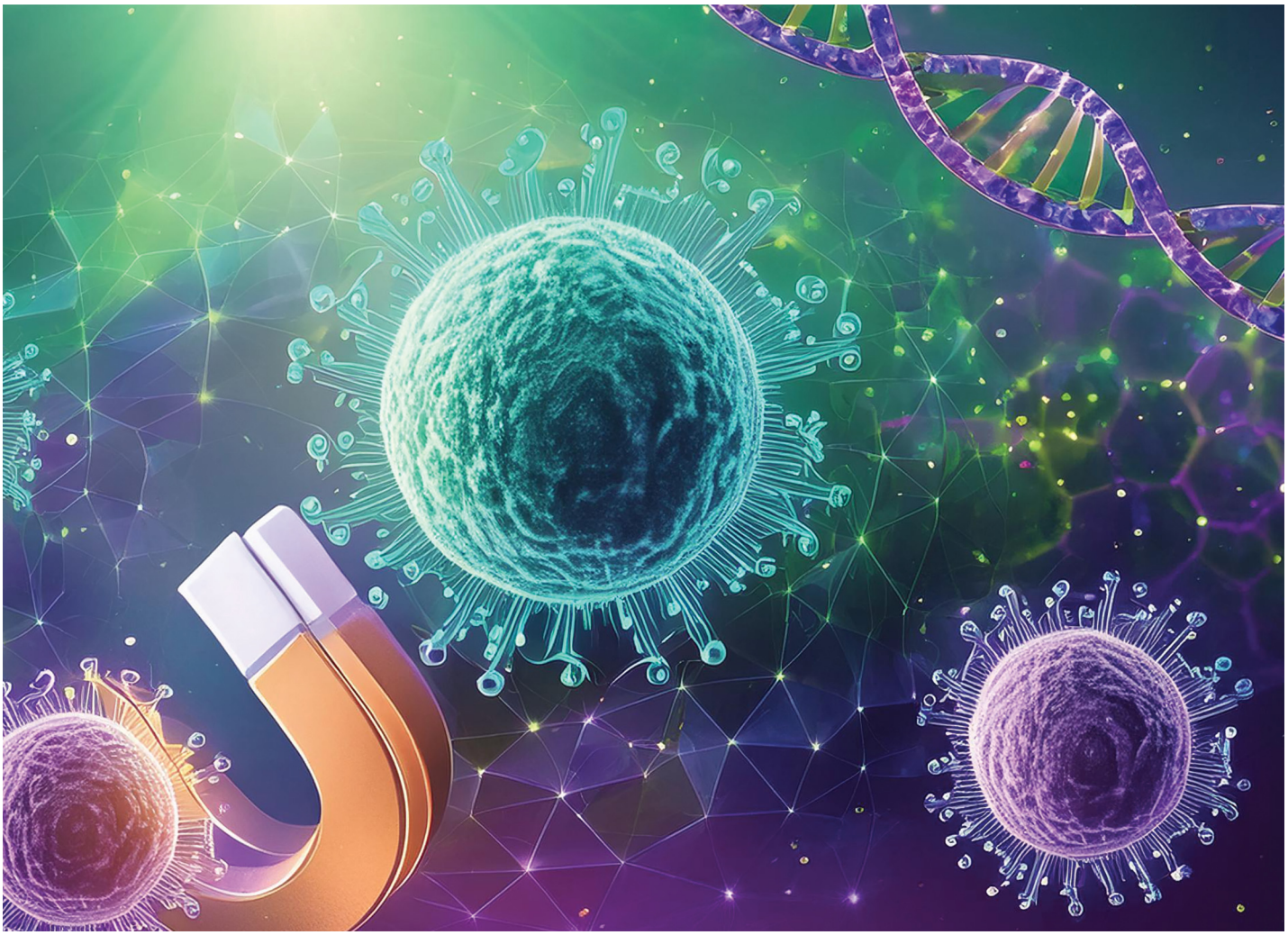

Showcasing research from Professor C. Chatzidoukas' laboratory, School of Chemical Engineering, Aristotle University of Thessaloniki (AUTH), Greece.

Functional polysaccharide-coated SPIONs for *in vitro* mRNA delivery in breast cancer cells

This study focused on developing and physicochemically characterizing two methods of mRNA binding—covalent and ionic—onto superparamagnetic iron oxide nanoparticles (SPIONs) coated with biocompatible polysaccharides, specifically oxidized dextran and quaternized chitosan. We conducted comprehensive investigations into the cellular uptake, proliferation, viability, migration, binding efficiency, and antibody expression related to these nanocarriers. The ultimate objective was to create a suitable nanocarrier for future pre-clinical *in vivo* applications, highlighting the role of novel approaches and materials in advancing the fields of magnetofection and personalized medicine.

As featured in:

See Christos Chatzidoukas *et al.*, *Mater. Adv.*, 2024, **5**, 5410.

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