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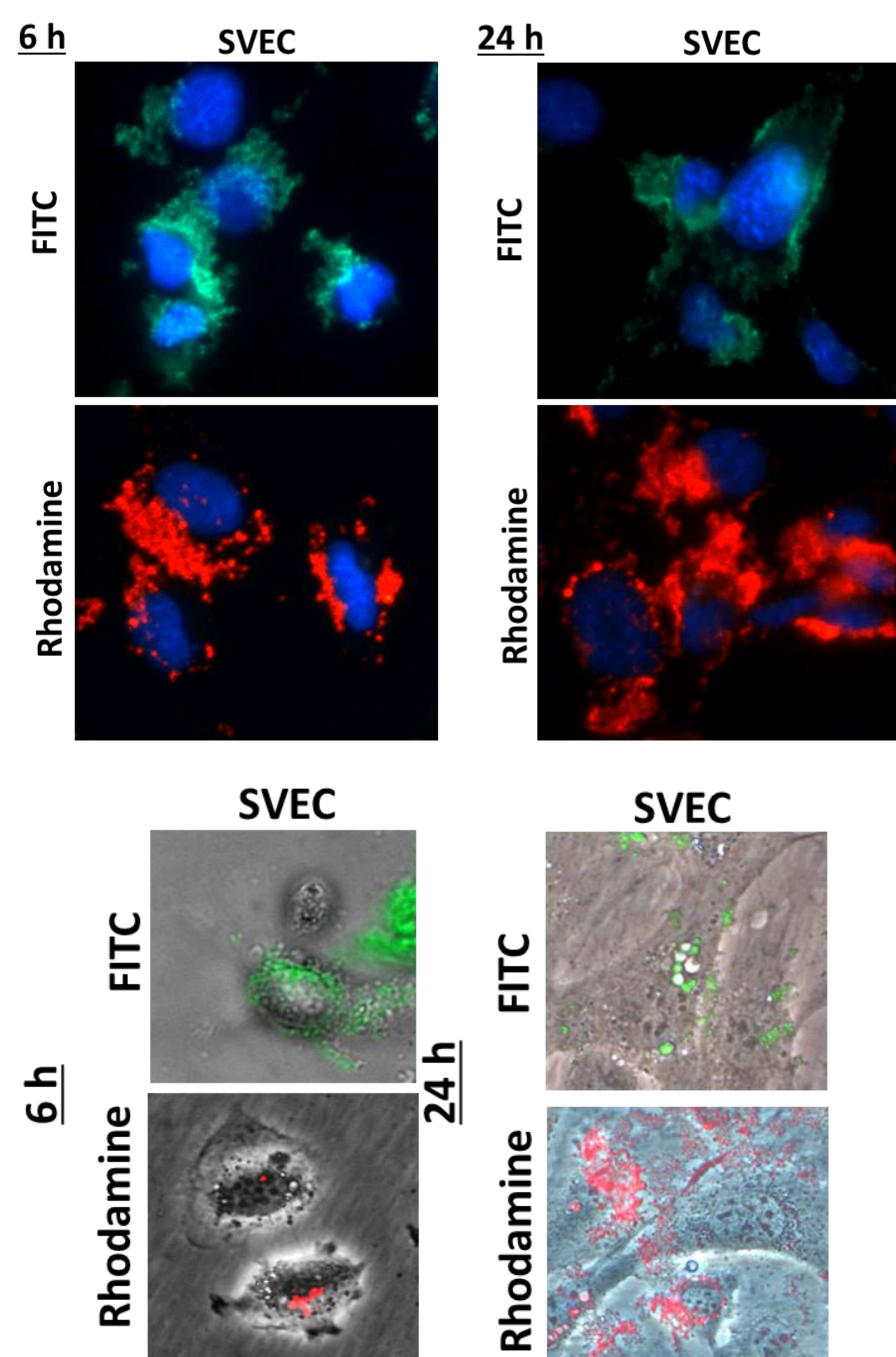
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INTRODUCTION

- ✓ **Nanogels** are a novel class of three-dimensional cross-linked polymers able to retain high amounts of water in their network structure, with large potential applications in nanomedicine.
- ✓ In our study, **the polymer matrix selected was chitosan (CS)**, as this polysaccharide biopolymer composed of N-acetylglucosamine and glucosamine residues exhibit great biocompatibility and low toxicity.

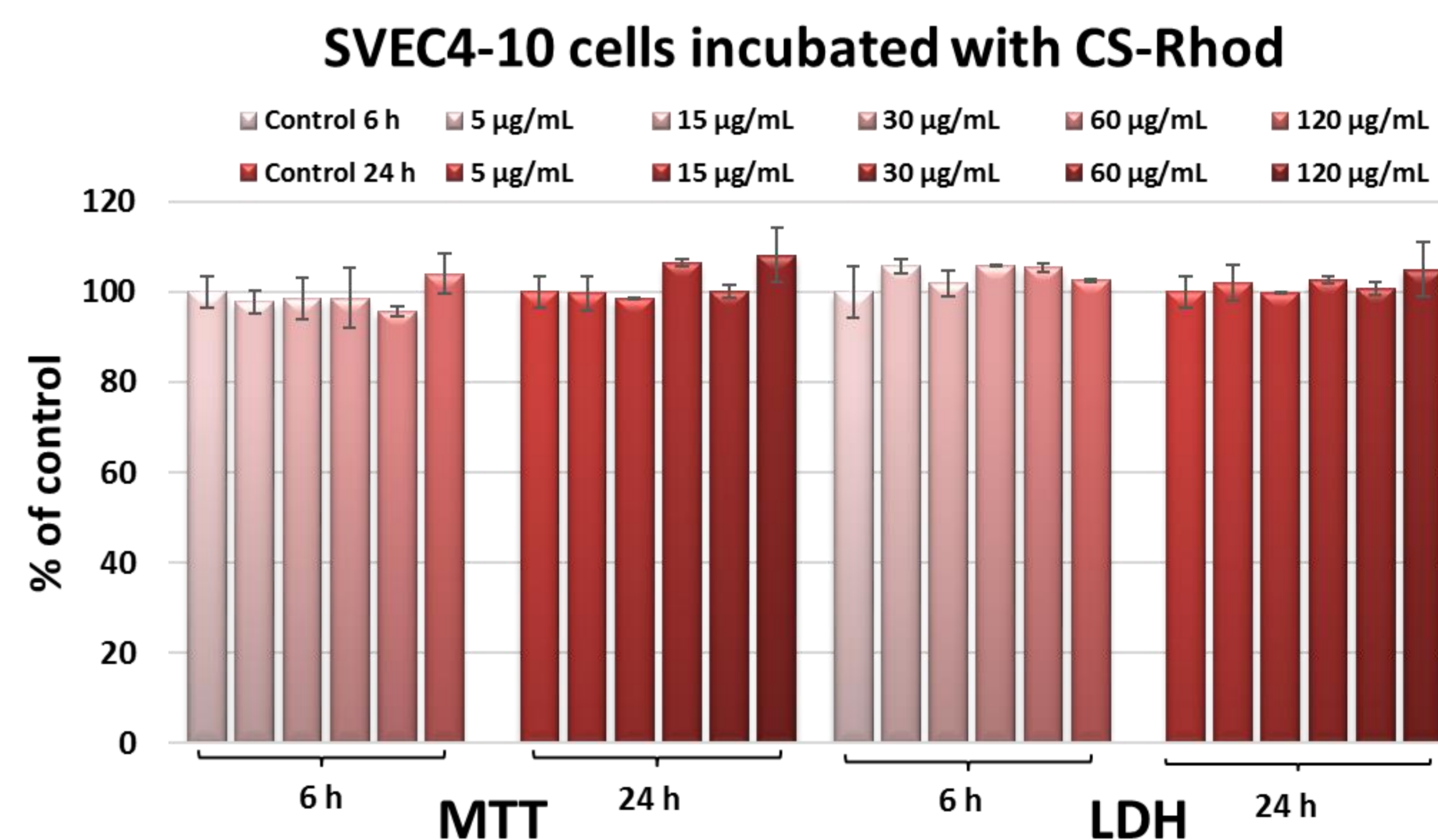
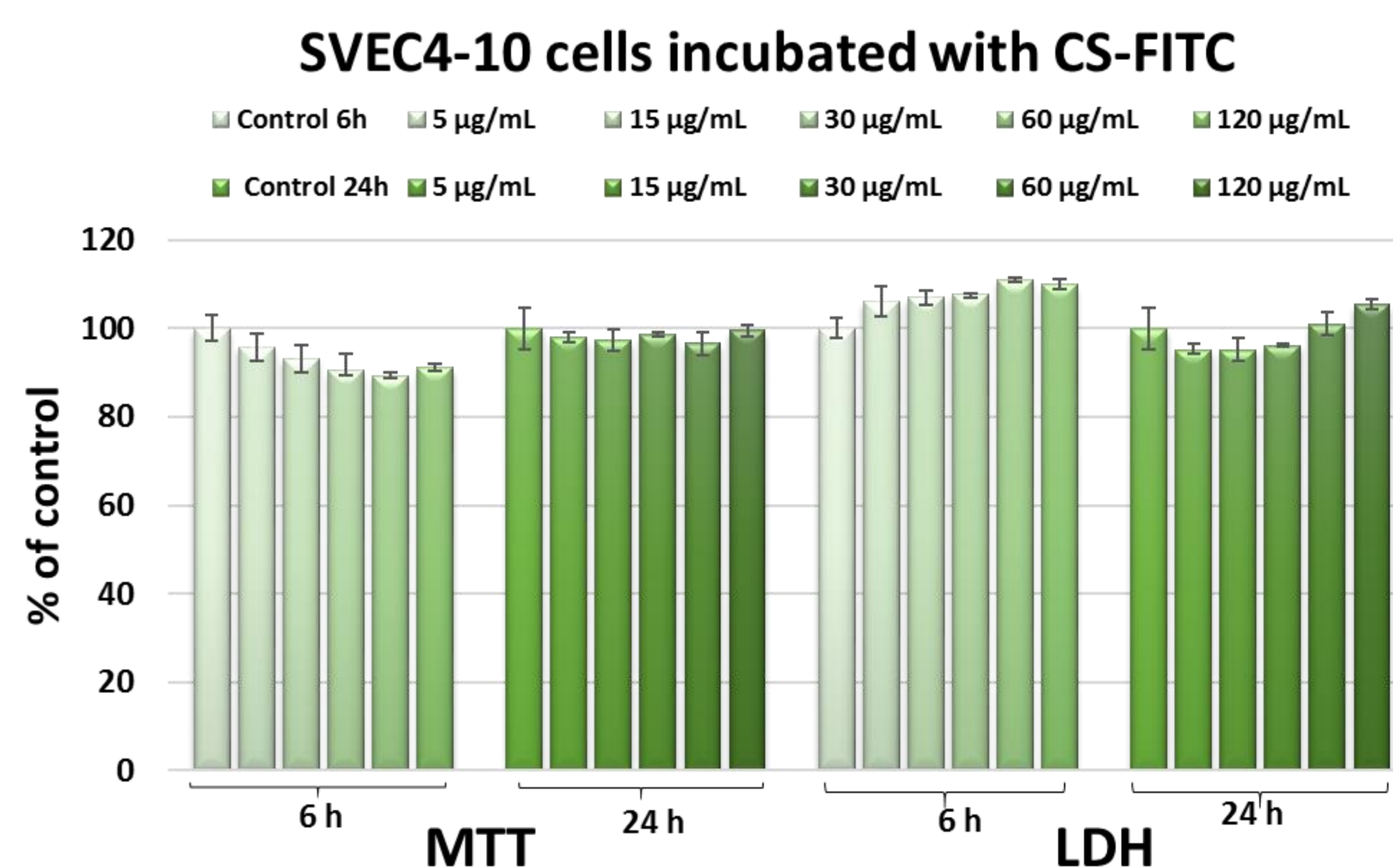
EXPERIMENTAL PROCEDURE

- ✓ **The preparation was performed by ionic gelation** in the presence of hyaluronic acid and sodium tripolyphosphate, having **rhodamine or fluorescein isothiocyanate molecules grafted on chitosan backbone** (CS-Rhod and CS-FITC, respectively).
- ✓ In order to validate the possible usage of these chitosan-fluorophores conjugates for fluorescence imaging purposes in cancer diagnostics and therapy, their biological effect was assessed on **SVEC4-10 cells** (a simian virus 40-transformed mouse microvascular endothelial cell line).
- ✓ Cell viability (**MTT test**), membrane integrity (**LDH test**) and nanogels uptake were examined following the exposure for **6 and 24 hours** at concentrations up to 120 μg/mL.



RESULTS

A **good biocompatibility** was obtained after both time intervals of incubation with nanogels, as **no increase in cell death or membrane damage** being noticed compared to control.



By examination on confocal laser scanning microscopy, the both types of fluorescent nanogels agglomerated on the surface of cell membrane, their cellular internalization being observed only for few cells, preferentially at the cell periphery.

CONCLUSION

Based on the biocompatibility of the nanogels, these can further incorporate gadolinium for an improved magnetic resonance Imaging effect in nanomedicine.



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