

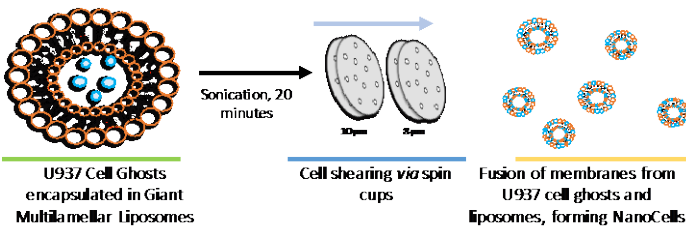
Nano Cell Vesicles for Drug Delivery

Technology overview

Nano Cell Vesicle Technologies (nCVTS) are a cell based drug delivery system that utilize the intrinsic targeting abilities of macrophages and monocytes to deliver therapeutics to tumour sites with reduced collateral damage to surrounding healthy tissues.

NUS Technology

nCVTs are produced from the modification of macrophages and monocytes, emptying their cellular contents and rendering them into nano dimensions, while preserving the exterior protein configuration.



nCVTs can then be loaded with therapeutics, and delivered to the tumour site for its intended effect.

Additional modifications such as fluorophore labelling, click chemistry, altering the surface charges of the nanoparticles or ligand(s) addition can also be performed.

Figure 1. Protein concentration of NanoCells after passing through the spin cups.

For comparison, the lipid formulation without Cell Ghosts that underwent the same procedure were used.

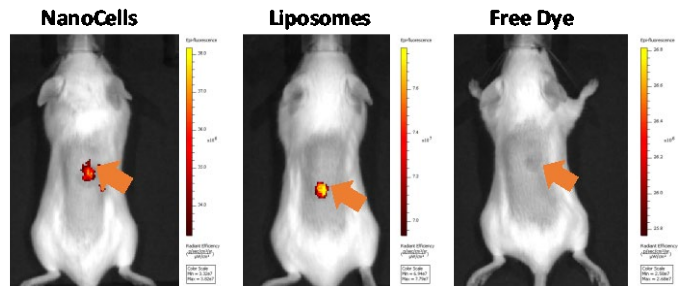
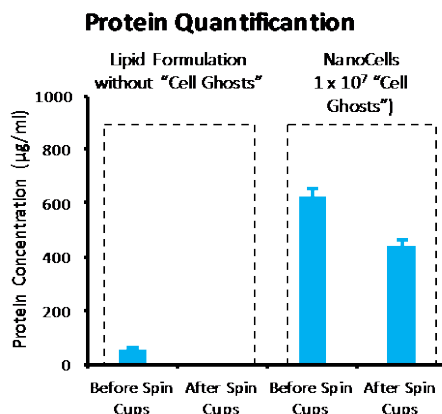


Figure 2. nCVTs and liposomes were labelled with a fluorescent dye and injected into a tumour mouse model. Samples were compared against the free dye. IVIS images post 24 hours showed accumulation of fluorescent labelled nCVTs and liposomes at tumour sites (orange arrows).

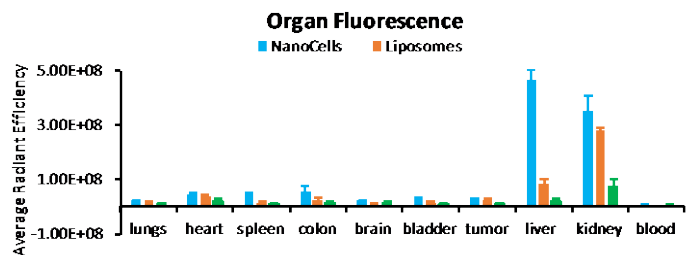


Figure 3. Relative fluorescence intensities of excised organs quantified by IVIS.

Main Advantages

- Improved targeting of tumour sites for therapy
- Use in both in vitro & in vivo
- Reduced collateral damage to surrounding healthy tissues
- Highly amendable to additional functionalization
- Potential dose sparing effect

➤ **A Novel Cell Based Drug Delivery System (DDS) for targeted delivery of therapeutics.**