IPAP18 Innovations in Pharmacy ADVANCES & PERSPECTIVES

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#IPAP18 Posters

Preparation, characterization and cell culture evaluation of docetaxel-loaded liposomes functionalized with cetuximab

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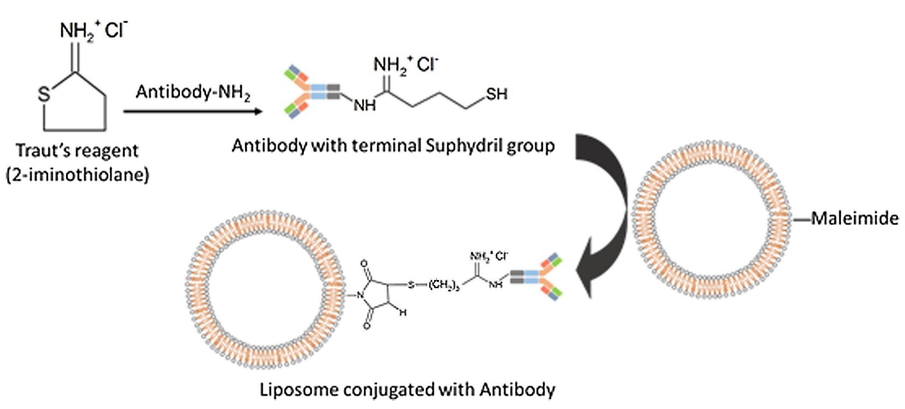
INTRODUCTION

Drug nanocarriers, including liposomes, are advantageous, having better drug efficacy with fewer side effects. Liposomes can be targeted with antibodies against overexpressed receptors on tumor cells for selective drug delivery. Thus, in this work we developed liposomes composed of phosphatidylcholine/cholesterol/disteroylphosphatidylethanolamine-maleimide for loading of docetaxel, prepared using the thin lipid film hydration method. The liposomes were functionalized with the monoclonal antibody cetuximab through thioter linkage between thiolated antibody and maleimide-containing liposomes, for EGFR targeting.

METHODS



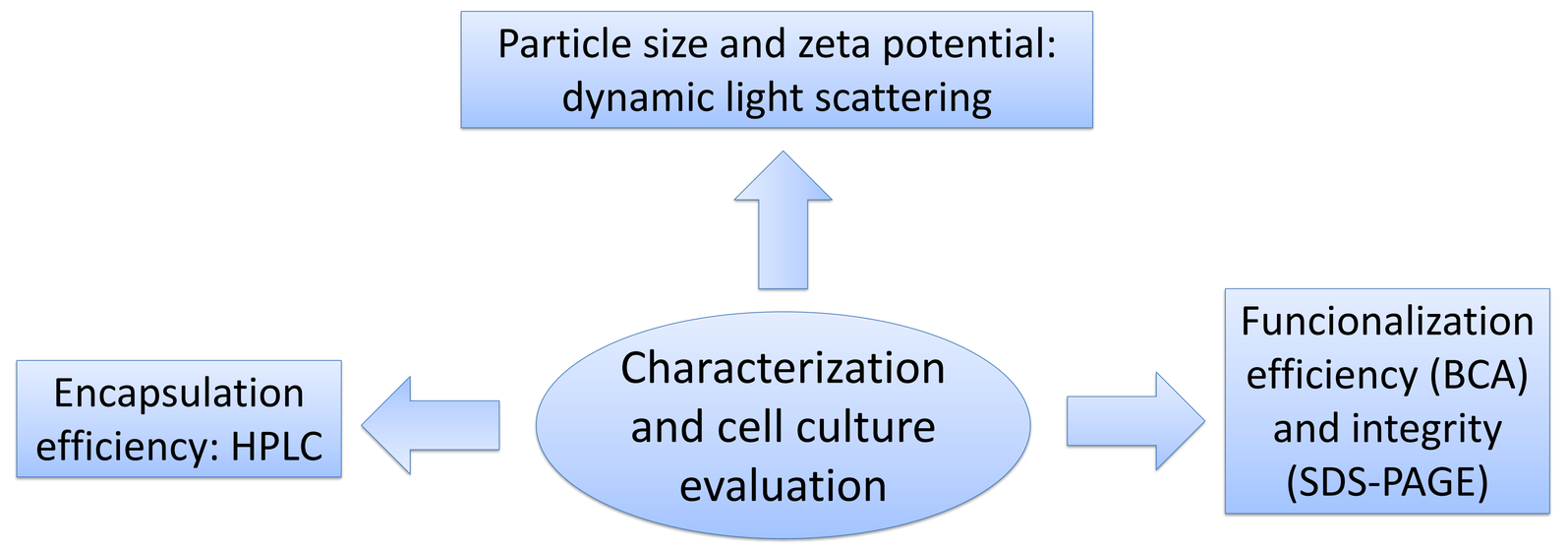


Fig. 01 Immunoliposome preparation

RESULTS

Table 01. Physicochemical characterization

	Liposome	Immunoliposome
Particle size	67.47 ± 4.32 nm	128,8 ± 2,35 nm
PdI	0.287 ± 0.006	0,279±0,002
Zeta potential	-16,6± 0.6 mV	-7,51 ± 0,50
EE	99,95%	93,5 ± 2,3%

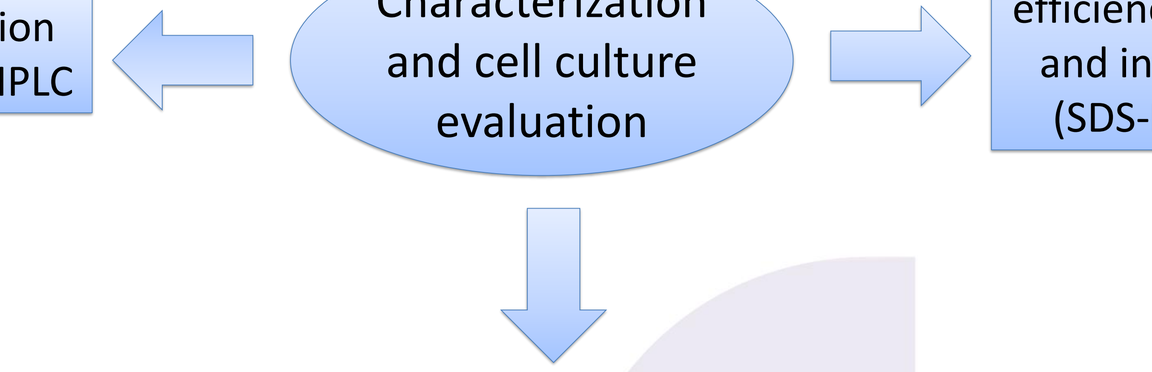


Fig. 2. Particle size distribution and TEM

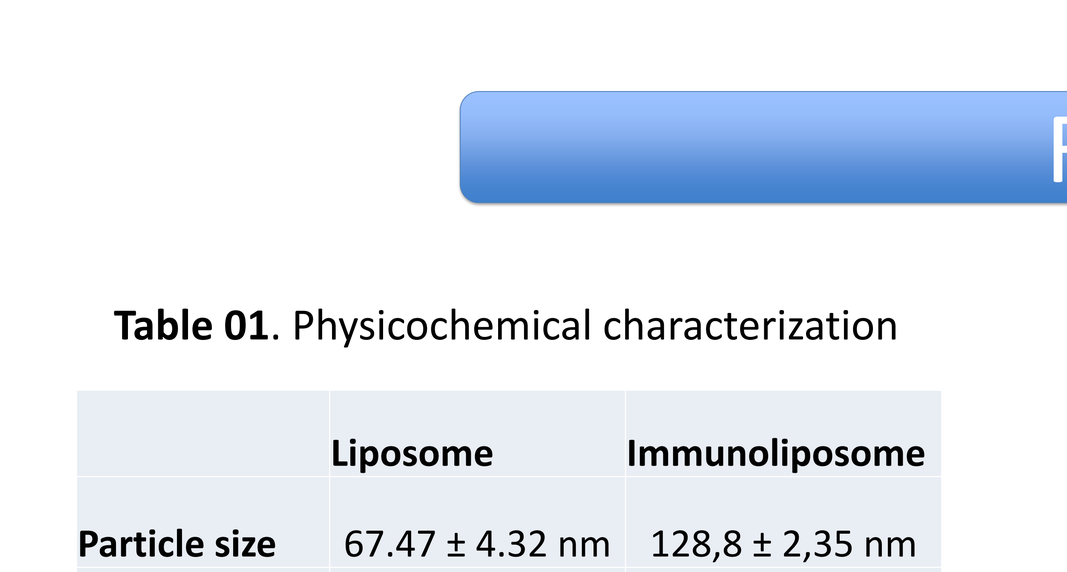


Fig. 3. Immunoliposome chacterization: SDS:PAGE and Gel Filtration Chromatography

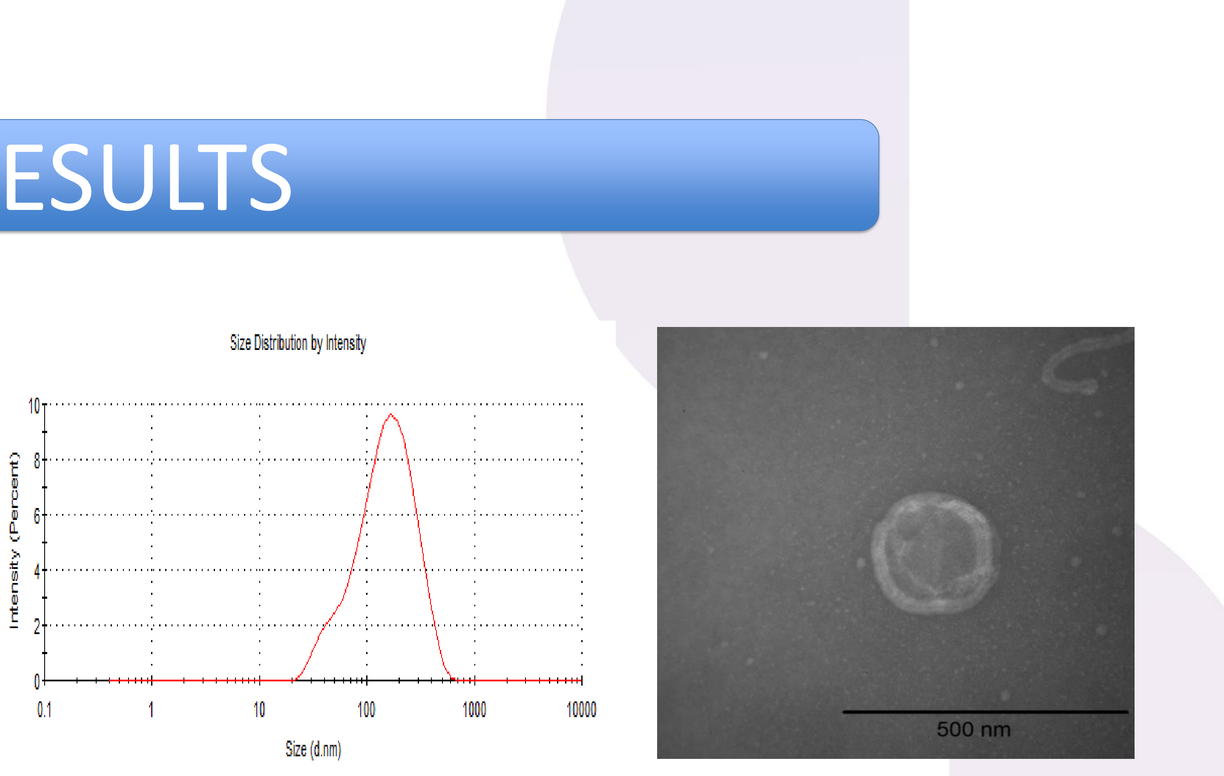


Fig. 4. Liposome and immunoliposome cellular uptake by confocal microscopy

CONCLUSION

Nanometric immunoliposome with high encapsulation and functionalization effiency lead to improved uptake in EGFR-positive prostate câncer cell line

ACKNOWLEDGEMENT

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