NOVEL FORMULATIONS OF MONOMERIC OR AGGREGATED AMPHOTERICIN B IN CATIONIC LIPIDS AND POLYELECTROLYTES

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Novel formulations for monomeric and aggregated amphotericin B (AmB) at low and high drug to lipid molar proportions (P), respectively, are described. At low P, drug was firstly solubilized in dioctadecyldimethylammonium bromide (DODAB) bilayer fragments (BF) before wrapping AmB/BF with two polyelectrolytes layers of carboxymethylcellulose (CMC) and poly(diallyldimethylammonium chloride) (PDDA). At high P, drug particles were firstly covered by DODAB BF and then similarly wrapped by the same polyelectrolytes. The different steps for each formulation were followed by means of dynamic light scattering for particle sizing, zeta-potential analysis, AmB optical spectra and *Candida albicans* cell viability. At 0.005 mM drug, 1 mM DODAB, 1 g/L CMC and 1 g/L PDDA, monomeric AmB was found in DODAB BF enveloped by the two polyelectrolytes layers with 171 nm mean diameter and 24 mV of zeta-potential for the final assembly. At 0.05 mM drug, 0.1 mM DODAB, 0.1 g/L CMC and 1 g/L PDDA, AmB was found in the aggregated state forming drug particles sequentially covered by DODAB BF, CMC and PDDA with 280 nm mean diameter and 35 mV of zeta-potential. *In vitro* both types of AmB formulations yielded complete fungicidal effect against *Candida albicans* ($1X10^{6}$ CFU/mL) representing good candidates to further clinical trials.

Financial support: FAPESP and CNPq.