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In vitro and in vivo evaluation of novel folate-targeted polymer lipid hybrid nanoparticles for paclitaxel delivery

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To reduce the toxicity and improve the therapeutic efficacy paclitaxel (PTX), folate-targeted polymer-lipid hybrid nanoparticles were prepared and evaluated for the delivery of PTX. The purpose of this study was to develop a novel lipid-polymer hybrid drug carrier comprised of folate (FA) modified lipid-shell and polymer-core nanoparticles (FLPNPs) for sustained, controlled and targeted delivery of PTX. PTX-FLPNPs were synthesized that composed of folate (as targeting ligand), DSPE-PEG2000 (as lipid-shell) and PCL-PEG-PCL (as self-assembled core) using thin-film hydration and ultrasonic dispersion method. The nanoparticles were evaluated *in vitro* and *in vivo* to assure the sustainable, controlled and targeted delivery of PTX. The PTX-loaded FLPNPs were successfully prepared with apparent lipid monolayer shell. High drug loading of more than 26% (w/w) could be achieved with high encapsulation efficiency of more than 90% when the PTX feed ratio was 30% (w/w). PTX was released in a controlled and sustained fashion with no apparent initial drug burst. Cellular uptake proved the internalization efficiency and targeting ability of the folate conjugation. In EMT-6 breast tumor model, intra-tumoral administration of PTX-loaded FLPNPs showed similar antitumor efficacy but low toxicity compared to Taxol[®]. More importantly, PTX-loaded FLPNPs showed greater tumor growth inhibition (65.78%) than the non-targeted PTX-loaded LPNPs (48.38%; p<0.05). PTX loaded FLPNPs with mixed lipid monolayer shell and biodegradable polymer core would be a promising Nano sized drug formulation for tumor targeted therapy.

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Secondary genital lymphangioma circumscriptum with bilateral inguinal scars in a young girl

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A cquired lymphangioma circumscriptum is a superficial lymphatic dilatation caused by a wide range of scarring processes. Histologically indistinguishable from congenital lymphangioma circumscriptum and occurs in all age groups, in adults as a late sequel of surgery, radiation therapy and sclofloderma. I present a 17 years old female patient presented with 2 months history of painless swelling and vesicular lesions on her vulva that occasionally rupture spontaneously and drain clear fluid. She had a bilateral inguinal discharging wound that left behind rope like scars. The vulva was studded with multiple clusters of tiny translucent vesicles (frogspawn appearance) overlying edematous vulvas bilaterally.

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