Publications Template

#	Research Title	Field	Abstract	Year of Publication Publishing	Publishing Link "URL"
1	High efficacy, rapid onset nanobiolosomes of sildenafil as a topical therapy for erectile dysfunction in aged rats	Transdermal permeation	Developing topical sildenafil for local treatment of erectile dysfunction has been of great interest in pharmaceutical research. Sildenafil citrate (SC) exhibited a well-documented success for treatment of several types of erectile dysfunction. However, its oral use is limited by serious adverse effects, poor bioavailability, delayed onset, and drug-drug interactions. This work is the first to design and assess sildenafil-loaded bilosomes for topical local treatment of erectile dysfunction. Different sildenafil-loaded bilosomes were prepared and characterized. Permeability of selected formulations was conducted through full-thickness human skin. Optimized bilosomes integrating sodium tauroglycocholate (STGC) showed spherical shape with good particle size (133 nm), high zeta potential (-53.6 mV) and high entrapment efficiency (87.45%). Ex-vivo permeability study revealed that about 39% of the applied dose permeated within 15 min. Furthermore, in-vivo appraisal of therapeutic efficacy was	2020	https://www.sciencedirect.com/science/article/abs/pii/S0378517320309637

			performed using aged male Sprague-Dawley rats. After single application of 2 mg/kg sildenafil loaded in STGC-bilosomes, behavioral and biochemical evaluation was carried out. Behavioral assessment recorded an increased rats' potency manifested as 2 folds increase in intromission frequency and intromission ratio compared to untreated group. That was accompanied by significant increase in cGMP concentration in corpora cavernosa ($P < 0.0001$) confirming increased potency. In conclusion, STGC-bilosomes could provide topical treatment of impotence with 20% of the oral dose and fast onset of action (10 min).		
2	Oleosomes Encapsulating Sildenafil Citrate as Potential Topical Nanotherapy for Palmar Plantar Erythrodysesthesia with High Ex vivo Permeation and Deposition	Transdermal permeation	Palmar plantar erythrodysesthesia (PPE) is a commonly reported skin toxicity of chemotherapeutic agents that significantly affects patients' quality of life. PPE is described as inflammation, swelling, and even cracks and ulcers in the skin of palms and soles of the feet. Conventional treatment includes topical creams, analgesics, or corticosteroids. However, serious cases are not responding to these medications. PPE has been reported to cause drug cessation or dose reduction if not properly treated. Sildenafil citrate (SC) has a well-documented activity in wound healing	2020	https://link.springer.com/article/10.1208/s12249-020-01862-2

			through improving blood supply to the affected area. However, SC has poor physicochemical properties limiting its transdermal permeation and deposition. This research endeavored to elaborate novel vesicular system with natural components, phospholipids and oleic acid, loaded with sildenafil citrate for topical management of PPE. Sildenafil-loaded oleosomes were prepared using modified ethanol injection method. Optimized oleosomes had nanometric particle size (157.6 nm), negative zeta potential (− 85.2 mv), and high entrapment efficiency (95.56%). *Ex vivo* studies on human skin revealed that oleosomes displayed 2.3-folds higher permeation and 4.5-folds more deposition through the human skin compared to drug suspension. Results endorsed SC oleosomes as suitable topical treatment of PPE providing ameliorated sildenafil permeability in addition to acting as a reservoir for gradual release of the drug.		
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