

## Preparation of niosomes containing sorafenib and evaluation of their physicochemical properties

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### Abstract Presener:

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### Abstract

**Introduction:** Sorafenib is an antineoplastic and tyrosine kinase inhibitor. Sorafenib used as a treatment for renal cell carcinoma (RCC), unresectable hepatocellular carcinomas (HCC) and thyroid cancer. In this study, niosomes containing sorafenib were formulated by thin film hydration method for improve the therapeutic performance of sorafenib.

**Methods and Results :** Different niosomal formulations comprised of non-ionic surfactants including sorbitan esters (Span 20, 40, 60, 80) and polysorbates (Tween 20, 40, 60, 80), cholesterol were prepared using thin film hydration method to investigate the physicochemical characteristics of niosomes including particle size, microscopic stability, sorafenib release into deionized water/ethanol (40:60) from the niosomes using Franz cell, sorafenib entrapment measurement. The sorafenib concentration was determined by spectrophotometer in 265 nm. Span/Tween 80 did not form niosome, but the other formulation formed niosomal suspensions. Most of the niosomes were multilamellar vesicles (MLV). The release data was best fitted by Baker-Lonsdale's release model.

**Conclusions:** A normal logarithmic particle size distribution was observed in some of the formulations. Niosomes had high physical stability during 6 months storage at refrigerator temperature. For clinical applications more studies on in vivo will be required in future studies.

**Key words:** Sorafenib, Niosome, Physicochemical properties, Non-ionic surfactants, Drug delivery