

# FORMULATION, OPTIMIZATION AND CHARACTERIZATION OF ELLAGIC ACID PHYTO-VESICULAR SYSTEM FOR BIOAVAILABILITY ENHANCEMENT

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## ABSTRACT

Ellagic acid is a naturally occurring chemical compound found in a variety of fruits and vegetables like blackberries, raspberries, strawberries, pomegranates and cranberries. Antioxidant, antimutagenic and anticancer effects are all included in ellagic acid. Ellagic acid, on the other hand, is poorly absorbed and rapidly removed from the body, making it a challenging drug candidate. To overcome the above limitation, solvent evaporation method was used for the preparation of ellagic acid phyto-vesicle complex. Several batches were prepared for optimization at varying drug to phospholipid concentration ratios. The optimized formulation was found to have particle size in the range of  $122.08 \pm 9.66$  nm, zeta potential  $-36.2$  mV, entrapment efficiency  $95.65 \pm 0.33$  % and a drug loading capacity of 22.9%. The *in vitro* release profile of the optimized batch shows maximum release behaviour of up to 69% at 24 h. The *ex vivo* intestinal permeation, however shows 85.38 % release within 140 minutes.