Abstract

Lung cancer continues to be a major cause of death worldwide, especially non-small cell lung cancer (NSCLC), with the efficacy of first-line cisplatin therapy often hindered by rapid resistance development. Recent researches have demonstrated that phytochemical compounds from coriander (*Coriandrum sativum*), a popular culinary herb, can act as synergistic adjuvant to enhance cisplatin sensitivity. However, direct administration of coriander extract is not feasible due to its poor stability and limited bioavailability. Therefore, emulsion is formulated to act as the carrier system for coriander extract, protecting it from degradation and enhancing its bioavailability using soy lecithin as surfactant due to its biocompatibility. Five formulations were tested with differences in soy lecithin concentration: L3, L4, L5, L6, and L7 (3, 4, 5, 6, and 7%, respectively). The characterization of coriander emulsions were performed, including O/W identification, visual and homogeneity, degree of separation, pH, and viscosity that were subjected into different stability tests, including room temperature, oven, freeze-thawing, and centrifugation. All emulsions were identified as O/W emulsions with L3 having the best homogeneity and lowest degree of separation with moderate viscosity. However, all formulations exhibited a poor pH stability, which requires further formulation and method optimization. Different soy lecithin concentrations also resulted in coriander emulsions with different characteristics and stability profile. Future studies should explore wider emulsion characterization and investigate the efficiency of emulsion in encapsulating the coriander extract.

Keywords: Coriander, emulsion, soy lecithin, characterization, stability test