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Preparation of Dry Dispersible Emulsion (DDE) to Enhance The Dissolution Rate of Curcumin

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Abstract: Curcumin is an active ingredient obtained from the turmeric plant and has been reported to have many biological activities as anti cancer, an anti-inflammatory, antimicrobial and antioxidant although its clinical use is limited because of its poor solubility in water and inadequate dissolution. **Objective-** The aim of this research is to prepare dry dispersible emulsion (DDE) of curcumin and to know its effect on enhancing the dissolution rate of curcumin. **Method-**The dry dispersible emulsion was prepared byusing a high-speed homogenization and ultrasonic technique. Caseinate sodium was used as the surfactant while virgin coconut oil was used as the lipid. Dispersion of the dry emulsion was then spray dried. Dry dispersible emulsion powder was characterized and compared with standard curcumin. **Result-**The DSC test showed a significant decrease in the melting point. **Conclusion-**The dissolution rate of curcumin can be significantly improved with a dry dispersible emulsion formulation. In formula A and formula C, the maximum dissolved curcumin increased by 83.65%, 81.53% in formula B, and 79.12% in formula C.

Keywords: curcumin, drug dispersible emulsion, spray dried, dissolution.

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