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(57) Abstract :
A self-nanoemulsifying drug delivery system (SNEDDS) formulation has been developed, comprising mesalamine and quercetin as active ingredients, along with excipients such as Capmul, transcuto-P, and tween-80. The formulation is optimized using a central composite design to achieve desired particle size, polydispersity index, and drug loading by considering factors like oil ratio and surfactant/co-surfactant ratio. This SNEDDS formulation enhances oral absorption, ensures stability, provides uniform particle size, and offers effective drug loading. It is prepared using a vortex mixing technique and shows improved drug delivery and release compared to other strategies like nanoparticles and polymeric micelles. Additionally, it significantly reduces inflammatory markers and offers a multi-targeted treatment strategy for colorectal cancer by addressing poor bioavailability and limited therapeutic efficacy, providing both anti-inflammatory and anticancer benefits. Reference Fig 1

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