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| (51) International classification | :A61P25/22, A61K9/127, A61K47/24, A61K47/28, A61K31/685, A61K31/5513 | (71)Name of Applicant : 1)Ms. Ritika Saxena Address of Applicant :Assistant Professor, Pharmacy Academy, Faculty of Pharmacy, IFTM University, Lodhipur Rajput, Delhi Road (NH-24), Moradabad, Uttar Pradesh – 244102, India Uttar Pradesh India 2)Dr. Mukesh Kumar Singh 3)Dr. Hemant Arunrao Sawarkar |
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(57) Abstract :

The present invention relates to a diazepam-loaded liposomal pharmaceutical composition for anxiety management and its preparation by thin film hydration. Diazepam is encapsulated in phospholipid vesicles formed from soya lecithin and cholesterol (2:1 molar ratio). The components are dissolved in chloroform-methanol (2:1), evaporated at 40–45 °C to form a thin film, hydrated with phosphate buffer (pH 7.4), and sonicated to produce nanosized liposomes. The formulation exhibits particle size of 120–250 nm, polydispersity index below 0.5, zeta potential of –20 to –35 mV, and entrapment efficiency up to 85%. It shows sustained biphasic drug release beyond 12 hours. In vivo studies demonstrate enhanced anti-anxiety effects, increased exploratory behavior, reduced dosing frequency, and improved stability compared to conventional diazepam formulations.

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