

## Brain targeting potential of carbamazepine SNEEDS

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The delivery of novel drug delivery systems to epileptic brain would be an attractive strategy [1]. Carbamazepine (CBZ) SNEEDS was developed using medium chain triglycerides, polysorbate 80, lecithin and ascorbyl palmitate. Ternary phase diagrams were constructed to identify the self nano-emulsified region. The SNEEDS were subjected to visual observation, size and zeta potential, scanning electron microscopic studies, Fourier transformed infrared spectroscopy, pharmacokinetics and brain distribution studies analyzed by HPLC. It was found that oil to surfactant ratio had an impact on the physical characteristics of the nano-emulsion formed. The brain levels of CBZ from optimized SNEEDS ( $108 \pm 1.2$  nm -  $25.6 \pm 3.5$  mv) were significantly high at all time points when compared to solution. The initial levels of CBZ from SNEEDS was 8.023mcg/ml thereafter the levels were consistently high till 8 hrs and the initial levels of CBZ from plain solution was 3.62mcg/ml followed by a gradual decline till 4hrs evidently showing that the clearance of CBZ from SNEEDS was reduced. The brain targeting index of SNEEDS and solution were 3 and 2 respectively. The brain enhancement factor value was found to be 22.29 at 15 mins revealing a very rapid penetration of CBZ into brain.

### Biography

Gannu Praveen Kumar has graduated from H.K.E society college of Pharmacy, Gulbarga University in 1997, M. Pharm from BITS, Pilani and pursued his Ph.D from UCPSC, Kakatiya University. He started his career in teaching in 1999 and rendered his services in Vaagdevi college of Pharmacy, SR college of Pharmacy and Talla Padmavathi College of Pharmacy. Presently, he is working as a Professor and HOD, Dept of Industrial Pharmacy for St. Peter's Institute of Pharmaceutical Sciences, Hanamkonda. He has guided 12 M.Pharmacy students. He has published 16 papers in peer reviewed National and International journals.

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