Introduction
The therapeutic role of Curcumin in the treatment of several diseases including wound healing, ulcers and arthritis has been reported in ancient medical systems of Ayurveda. Curcumin activities as an anti-inflammatory, antioxidant and antitumor have been reported by several researchers. It produces therapeutic action through regulation of nuclear factor kappa B (NF-kB), activator protein (AP)-1 and hypoxia inducible factor (HIF)-1α. Based on in-vivo studies and clinical trials it has been reported that Curcumin has very low bioavailability due to its poor solubility. Hence, to address this problem we propose to develop formulations of PLGA and Albumin nanoparticles loaded with Curcumin to increase its solubility and impart targeted release properties.

Objectives
- Increase the solubility of Curcumin
- Formulate PLGA and albumin nanoparticles loaded with Curcumin
- Study the In vitro and In vivo release of PLGA and albumin nanoparticles loaded with Curcumin

Methods
- PLGA nanoparticles loaded with Curcumin were formulated by solvent evaporation method
- Particle size and zeta potential were determined by Zetasizer
- Aqueous solubility was determined by UV spectroscopy
- Morphology was determined by scanning electron microscopy

Figure 1: particle size of PLGA loaded Curcumin nanoparticles was found to be in the range of 80 to 125nm

Figure 2: Zeta potential of the nanoparticles was found to be -20mV

Figure 3: UV absorbance of curcumin loaded PLGA nanoparticles was found to be 0.2371 μg/ml whereas absorbance of unformulated curcumin was found to be 0.0082 μg/ml.

Results and discussion

Conclusions
Particle size of the Curcumin loaded PLGA nanoparticles was within the desired range. Zeta potential was found to be -20mV indicating that Curcumin loaded PLGA nanoparticles are stable. UV absorbance studies indicate enhanced aqueous solubility of curcumin when formulated as PLGA nanoparticles. Hence, PLGA nanoparticles formulation increases curcumin solubility may pave the path for therapeutic application of Curcumin in several inflammatory diseases.

REFERENCES