Chapter VII

Conclusion

- The percentage yield of isolated Curcumin, DMC and BDMC were found to be 0.393, 0.087 and 0.016% respectively. The Rf value of Curcumin, DMC and BDMC were found to be 0.67, 0.48 and 0.30 respectively. The percentage purity of Curcumin, DMC and BDMC was found to be 99.19, 98.82 and 99.25% respectively as evidenced by HPLC & HPTLC.

- The structures of isolated curcuminoids were identified by spectral data of MASS, IR, 1H-NMR & 13C-NMR and were confirmed by comparison of previous reported literatures.

In vivo anti-arthritic screening using Freund’s complete adjuvant (FCA) rat model showed CUR and CM as most effective as compared to DMC & BDMC in counteracting rat paw edema, body weight changes, alterations in hematological (Hb, RBC, WBC and ESR), deranged biochemical parameters (TNF-α, IL-1β, IL-6 & IL-10) followed by altered RT-PCR for determining pro/anti-inflammatory markers in synovium tissue suggesting that DMC & BDMC may not having any synergistic anti-inflammatory effect.

- In 6-hydroxydopamine-(6-OHDA) rat parkinsonism model, curcuminoids appeared to shield progressive neuronal degeneration from increased oxidative attack in 6-OHDA-lesioned rats through its free radical scavenging mechanism, and DA, DOPAC, and HVA enhancing capabilities in the sequence of efficacy CUR ≥ CM > DMC > BDMC suggesting that CUR is more potent antioxidant than DMC & BDMC.

- All the three isolated curcuminoids and their mixture evaluated in the in vitro study inhibited MCF-7 cells proliferation in dose dependent manner. Out of these, DMC and CM were much more effective followed by CUR & BDMC suggesting that methoxy groups might not play an important role in inhibiting cell proliferation.

Clearly, more preclinical and clinical studies are needed to investigate the molecular mechanism and pharmacological properties of these plant derived molecules to use in future for treatment of various disorders.
Further work needs to be done by using other in vivo and in vitro models using other cell lines including colon cancer cell line, in order to confirm these findings. Besides, all these individual compounds need to be screened for their synergistic action against other diseases. The molecular mechanism are also needs to be elucidated using suitable parameters and models.