Ammon HPT & Wahl MA., 1991). Recently, turmeric has been valued and researched worldwide as a functional food because of its health promotion property.

Curcuminoids, a major constituent of *Curcuma longa* is a mixture of three, different chemical moieties namely Curcumin (CUR), Demethoxycurcumin (DMC), and Bisdemethoxycurcumin (BDMC) (Tonnesen, 1989).

Curcumin is a hydrophobic polyphenol derived from turmeric: the rhizome of the herb *Curcuma longa*. Chemically, it is a bis-α,β-unsaturated β diketone (commonly called diferuloylmethane) that exhibits keto-enol tautomerism, having a predominant keto form in acidic and neutral solutions and a stable enol form in alkaline media. Commercial curcumin is a mixture of curcuminoids, containing approximately 77% diferuloylmethane, 18% demethoxycurcumin, and 5% bisdemethoxycurcumin.

Traditionally, turmeric and other curcuminoids have been used in therapeutic preparations for various ailments in different parts of the world. Earlier literature reveals that in various studies Curcumin and curcuminoids are treated as the same entity possibly because CUR constitutes the major part (almost 77%) in the mixture (Inano et al., 2000). Analysis of the scant number of published reports/publications is confounded by the use of extracts or commercially available mixture of curcuminoids, that are neither well characterized nor uniform in their composition of its individual curcuminoids i.e. curcumin, demethoxycurcumin and bisdemethoxycurcumin. Numerous therapeutic effects of curcumin/turmeric/curcuminoids have been confirmed by modern scientific research.

Most of these studies have evaluated the antioxidant, anti-inflammatory, anticancer, neuroprotective, antiepileptic, hepatoprotective, cardioprotective and many more pharmacological effects of various uncharacterized extracts designated as “curcumin”. As Curcumin, DMC, and BDMC differ in their chemical structures, they must exhibit different pharmacological, pharmacokinetic and pharmacodynamic activities. To date there has been no systematic study that clearly correlates the physicochemical and molecular properties of the three curcuminoids with their biological activities.
Therefore, the present study was carried out with an aim to evaluate the role of individual isolated curcuminoids, that is, Curcumin (CUR), Demethoxycurcumin (DMC), and Bisdemethoxycurcumin (BDMC) and Curcuminoids mixture (CM) in different pharmacological activities.