CHAPTER V

CONCLUSION

The CAF derivatives were synthesized and EDP, ODP, PMDP and PEDP were classified as ester derivatives, whereas EDPA, ODPA, PMDPA and PEDPA were grouped as amide derivatives. The antioxidant properties including DPPH radicals, hydroxyl radical, superoxide anion and nitric oxide were chosen to assess free radical scavenging properties of the derivatives *in vitro* models. CAF and its derivative were high in potency to scavenge the radicals by a dose- dependent manner. The EDPA has the highest potency to scavenge free radicals. Moreover, the FRAP, reducing power and antioxidant activity in linoleic acid emulsion system were selected to study antioxidative properties of the derivatives. EDPA has the highest potency to inhibit oxidative reaction with dose-response relationships.

The CAF and derivatives inhibited microsomal enzymes, CYP1A2, CYP2E1 and CYP3A4 activities leading to reduction in free radical generation process. The CAF and derivatives could induce microsomal enzymes, UGT, GST and HO-1 in Hep G2 cell lines. The EDP, PMDPA and CAF were the most potent inducer of UGT, GST and HO-1 activity, respectively. The CAF and derivatives were toxic to liver cancer cells (Hep G2) in dose- dependent manner.

By the mechanism, CAF and derivatives were grouped in blocking agent. The CAF and derivatives potentially inhibited initiation process in *in vitro* models that

could be successful strategy for cancer chemoprevention. Further study *in vivo* and animal toxicity tests need to be explored.