Conclusion
CONCLUSION

Now a days, there has been growing interest in alternative therapies and the therapeutic use of natural products. Renewed interest has occurred in the last decade to search for phytochemicals for their efficacy and cost effectiveness. Several studies showed that the antiobesity activities of medicinal plants were due to the presence of antioxidants and phytochemicals present in them.

The review of literature provides a clear picture on the *Benincasa hispida* against various treatments. *Benincasa hispida* fruit is a naturally available vegetable which belongs to cucurbitaceae family. *Benincasa hispida* fruit extract was found to be rich in phenols like gallic acid and coumaric acid, flavonoids such as quercetin, rutin and also saponins, terpenoids. Presence of β-Sitosterol in the extract might be attributing to its antiobesity potential. The results of the present investigation demonstrate that EEBH and AFBH are rich in phytochemicals that scavenge free radicals and AFBH attenuate adipogenesis in 3T3-L1 cell lines by reducing the expression of lipogenic genes such as LPL, FAS, SCD and transcriptional factors such as PPARγ and CEBPα by activating AMPK.

The ability of AFBH and EEBH to attenuate obesity induced hepatic steatosis in high fat diet fed obesity induced animals was also studied. Comparing EEBH and AFBH, AFBH showed significant results in treating obesity and reduced the hepatic steatosis.

The results obtained from *in vitro* and *in vivo* studies revealed that the AFBH ameliorate obesity in high fat diet fed animals and this may be due to the phytochemicals present in AFBH.

Thus we conclude that the AFBH may be used as a herbal drug for treating obesity. The outcome of the present study may provide better understanding on the anti-obesity effect of AFBH via suppressing adipogenesis and also maintaining the level of lipids and glucose within normal limits.
Probable Mechanism of action of *Benincasa hispida*

- **Benincasa hispida fruit extract**
  - **Oxidative stress**
  - **Antioxidant level**
  - **Attenuate adipogenesis**

- **Serum** Total cholesterol, TG, LDL and Leptin levels,
  Lipid accumulation in adipose tissue and liver of experimental animals

- **Serum HDL, Adiponectin levels**