

CHAPTER IV

CONCLUSION

During the course of this research, 1,7-bis-(3,4-dimethoxyphenyl)-4-methyl-1,6-heptadiene-3,5-dione (**TMC**) was successfully synthesized. The compound possesses excellent UVA absorption profile. However, the compound was photounstable. Bis(4-((1*E*,6*E*)-7-(3,4-dimethoxyphenyl)-3,5-dioxohepta-1,6-dienyl)-2-methoxyphenyl) succinate was synthesized from curcumin through the ester linkage with succinic acid. Subsequent methylation with methyl iodide gave bis(4-((1*E*,6*E*)-7-(2-methoxyphenyl)-4-methyl-3,5-dioxohepta-1,6-dienyl)-2-methoxyphenyl) succinate (**MCO**). Blue shift from the visible absorption to the UVA region could be successfully created into the **MCO** structure, thus **MCO** is a potential organic UVA filter. **MCO** was more photostable than trimethylcurcumin (**TMC**). In addition, **MCO** possessed significantly lower transdermal penetration property than **TMC** and **EHMC**.

Future work

- Study about the relationship between Mw of **MCO** and transdermal penetration
- Study about the photodegradation of **TMC**
- Study about the relationship between photostability and the size of **MCO** oligomer