

## CHAPTER 5

### CONCLUSIONS

This study has shown antibacterial activity of five Thai medicinal plant extracts; *Ao* bark and leaves, *Sc* leaves, *Pn* pericarp and *Tb* dried-fruit against periodontopathic bacterial (*Aa*, *Pg*, *Pi*). The safety of these plant extracts, i.e. lack of toxicity on HGF, provides more information and direction on developing them for adjunctive use in locally administered periodontal treatment in the future. The safety margins in this study are *Ao* leaves extracts (up to 156.25 mg/ml), *Ao* bark extracts (up to 48.5 mg/ml), and *Sc* leaves extracts (up to 156.25 mg/ml). *Rn* leaves and *Sc* bark extracts had cytotoxic effect.

The safety margin of *Ao* and *Sc* leaves extracts were higher than *Ao* bark extracts and all of their safety margins were over their MIC and MBC. The oral cavity has saliva and oral biofilm to interfere with the efficacy of local delivery, so the concentration used must be higher than that used in the *in vitro* study.

*Ao* bark and leaves, *Sc* leaves and *Tb* dried-fruit can promote HGF proliferation *in vitro*. This data may be useful in sight of periodontal wound healing or regeneration. Within the respect of anti-inflammatory efficacy, *Ao* leaves, *Sc* leaves and *Pn* pericarp extracts have a tendency to reduce PGE<sub>2</sub>. Based on the antibacterial and anti-inflammatory effect, and the non toxicity, these plant extracts may be categorized into three groups, as follows:

1. The most effective plants include extracts of *Ao* bark and leaves, and *Sc* leaves that have the potential to develop as adjunctive periodontal therapy and periodontal wound healing or regeneration.
2. An intermediate potential includes extracts of *Tb* dried-fruit and *Pn* pericarp. Future research is needed to confirm the efficacy of these extracts.
3. No potential includes extracts of *Rn* leaves and *Sc* bark. Future research is needed to investigate different extraction methods.

This data further implicates that some Thai medicinal plant extracts in this study have the potential to be used in periodontal therapy.