
Antimicrobial activity of Medicinal Plant Extracts against *Streptococcus mutans*

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ABSTRACT

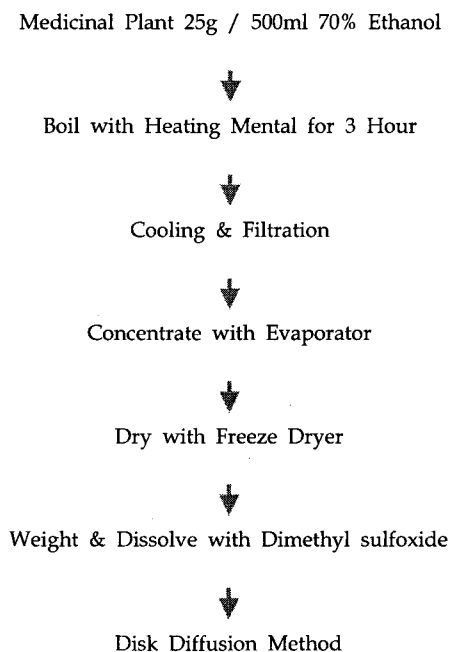
This study was carried out to research antimicrobial agents from medicinal plants, *Lonicera japonica*, *Pinellia ternata*, *Dictamnus albus*, *Cryptotympana pustulata*, *Pinus densiflora*, *Bupleurum falcatum*, *Forsythia saxatilis*, *Castanea crenata*, *Hovenia dulcis*, *Prunus sargentii*. The ethanol extracts of 10 medicinal plants were tested for the antimicrobial activity against *Streptococcus mutans*. The extracts of *Pinus densiflora* showed significant antimicrobial activity against *Streptococcus mutans*. These results suggested that the extract from *Pinus densiflora* could be a candidate for new antimicrobial agents against *Streptococcus mutans*.

I. Introduction

Streptococci is known to be potent in creating dental caries. Among the several species of Streptococci, *Streptococcus mutans* is the most predominant strains in human dental caries. *Streptococcus mutans* can adhere to the tooth surface and produce water insoluble glucans from sucrose, which enable *Streptococcus mutans* to colonize the tooth surface.

Antimicrobial activities of 10 medicinal plant extracts, which were prepared from *Lonicera japonica*, *Pinellia ternata*, *Dictamnus albus*, *Cryptotympana pustulata*, *Pinus densiflora*, *Bupleurum falcatum*, *Forsythia saxatilis*, *Castanea crenata*, *Hovenia dulcis*, *Prunus sargentii*, were evaluated against *Streptococcus mutans*. The extract of *Pinus densiflora* showed significant antimicrobial activity against *Streptococcus mutans*.

II. METHODS



III. RESULTS

Table 1. Antimicrobial activity of medicinal plant extracts against *Streptococcus mutans*.

Scientific Name	Medicinal Part	Ethanol Extract
		(200 µg/disk) <i>Streptococcus mutans</i>
<i>Lonicera japonica</i>	Flower	-
<i>Pinellia ternata</i>	Tuberous Root	-
<i>Dictamnus albus</i>	Root Bark	-
<i>Cryptotympana pustulata</i>	Slough	-
<i>Pinus densiflora</i>	Node of Branch	++
<i>Bupleurum falcatum</i>	Root	-
<i>Forsythia saxatilis</i>	Fruit	-
<i>Castanea crenata</i>	Pericarp	-
<i>Hovenia dulcis</i>	Seed	-
<i>Prunus sargentii</i>	Bark	-

The antimicrobial activity was represented as followed. : - no inhibitory effect, +; 8.1-10.0mm, ++; 10.1-13.0mm, +++; 13.1-16.0mm, ++++; over 16.0mm

VI. CONCLUSIONS

1. The ethanol extracts of 10 medicinal plants were tested for the antimicrobial activity against *Streptococcus mutans*.
2. The extracts of *Pinus densiflora* showed significant antimicrobial activity against *Streptococcus mutans*.
3. The extracts from *Pinus densiflora* could be a candidate for new antimicrobial agents against *Streptococcus mutans*.

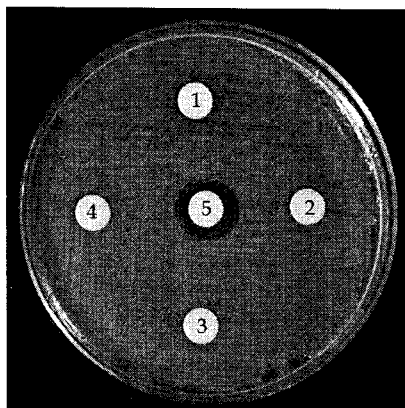


Figure 1. Assay of antimicrobial activity by different medicinal plant extracts. 1: *Lonicera japonica*, 2: *Pinellia ternata*, 3: *Dictamnus albus*, 4: *Cryptotympana pustulata*, 5: *Pinus densiflora*