



## PROGRAM AND PROCEEDING BOOK

### The 3<sup>rd</sup> ASEAN Plus and Tokushima Joint International Conference

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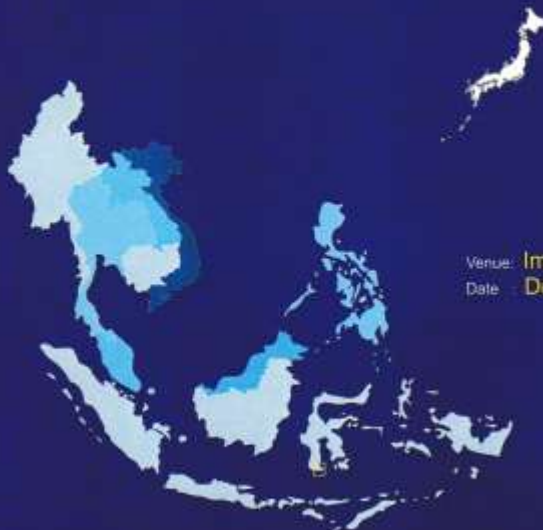
“Strategic Achievement of Oral Sciences and Promotion of Quality of Life and Professional Education for Oral Hygienists by Using Information and Communication Technology”

Organized by:

Faculty of Dentistry  
Hasanuddin University  
Makassar, Indonesia



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**Executive Editors : Eiji Tanaka, Mansjur Nasir**

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- P14 Modification Of Conventional Removable Partial Denture For Aesthetic Enhancement: A Literature Review

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- P16 Antibacterial Test Of Crude Extract Pineapple Hump (*Ananas cosmosus*) In Inhibiting Growth Of *Streptococcus mutans*

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- P18 The Effect Of Hyperbaric Oxygen To The Growth Of Mucormycosis Agent *Rhizopusoryzae* Strain CBS 110.17 (An *In vitro* Preliminary Study)

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#### Poster 16

### Antibacterial Test Of Crude Extract Pineapple Hump (*Ananas cosmosus*) In Inhibiting Growth Of *Streptococcus mutans*

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Pineapple (*Ananas cosmosus*) is a fruit that is produced in Indonesia because thrives in tropical climates. Crude extract pineapple contains a proteolysis enzyme *bromelain*, an enzyme that can hydrolyze protein, protease or peptide which can be obtained at highest concentration from the hump. This enzymes composed of 212 amino acid residues with a cysteine-25 form polypeptide chain that can be hydrolyzed to become peptide bond by using H<sub>2</sub>O.

Objective : The aim of this study was to examine potential bromelain enzyme in crude extract to inhibit the growth of *Streptococcus mutans*.

Methods : Pineapple hump was extracted by maceration with water. The antibacterial effect of crude extract was examined with dilution and diffusion methods for 3x24 hour incubation.

Result : In the antibacterial test against *S. mutans*, the MIC (Minimum Inhibition Concentration) value of dilution was a concentration of 12.5% in 48 hour incubation; whereas the MIC value of diffusion was a concentration of 8% in 72 hour incubation. The MBC (Minimum Bactericide Concentration) value was a concentration of 9% in 72 hour incubation.

Conclusion : Crude extracts pineapple inhibiting the growth of *S. mutans* in concentration of 9% in 72 hour incubation.

Keywords: crude extract, pineapple, *Streptococcus mutans*.

#### Poster 17

### The Effect Of *Sticophus hermanii* Extract To The Level Of Matrix Metalloproteinase (MMP)-8 In *Porphyromonas gingivalis*-Induced Periodontitis

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Objective: Periodontitis is a chronic bacterial infection induced inflammation which affect the supporting tissue including alveolar bone. *Porphyromonas gingivalis* the major periodontopathic bacteria, which has its properties to locally invade periodontal tissue and evade the host defense mechanism, resulted in destruction of

periodontal tissue and alveolar bone. Matrix metalloproteinase (MMP)-8 is associated with the periodontal tissue degradation in periodontal disease. Sea cucumber (*Sticophus hermanii*) extract has been known to have antibacterial property against *P. gingivalis*, it also known as traditional medicine for wound healing, thus potential to be examined further as candidate agent therapy in periodontitis.

The aim of the study is to examine the effect of *Sticophus hermanii* extract to the level of MMP-8 in *P. gingivalis*-induced periodontitis

**Material and Methods:** The study is an experimental laboratories research with post test only control group design. Forty male wistar rats were divided into 5 groups, each consisted of 8 rats. Control groups consisted of normal group and periodontitis group, were given 0.2% CMC Na peroral. Periodontitis were induced by *Porphyromonas gingivalis* ATCC 33277. Treatment groups were periodontitis rats which given *Sticophus hermanii* extract per oral 25 mg/kg BW (PO group), applied 0.1 ml of 3% extract gel topically on gingival sulcus (TO group) and compared to TE group which were applied 0.1ml of tetracycline gel topically on gingival sulcus. All treatments were applied once daily in 14 consecutive days. Whole saliva were taken out and the level of MMP-8 were examined by ELISA. Data were analyzed by ANOVA dan LSD test.

**Result :** The level of MMP-8 were highly increased significantly on the periodontitis group (508.31 pg/mL) compare to the normal group (73.11pg/mL) ( $p < 0.05$ ). Treatment of *Sticophus hermanii* significantly reduced the MMP-8 level i.e 447.12 pg/mL in PO group and 213.43 pg/mL in TO group, while treatment with tetracycline gel in TE group reduced the MMP-8 level to 325.28 pg/mL, sltghtly higher than in TO group ( $p < 0.05$ ).

**Conclusion :** *Sticophus hermanii* extract reduced the level of MMP-8 in *Porphyromonas gingivalis*-induced periodontitis.

**Keywords:** *Stichopus hermanii*, MMP-8, periodontitis, *Porphyromonas gingivalis*.

#### Reference:

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#### Poster 18

**The Effect Of Hyperbaric Oxygen To The Growth Of Mucormycosis Agent *Rhizopus oryzae* Strain CBS 110.17 (An *In vitro* Preliminary Study)**

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