

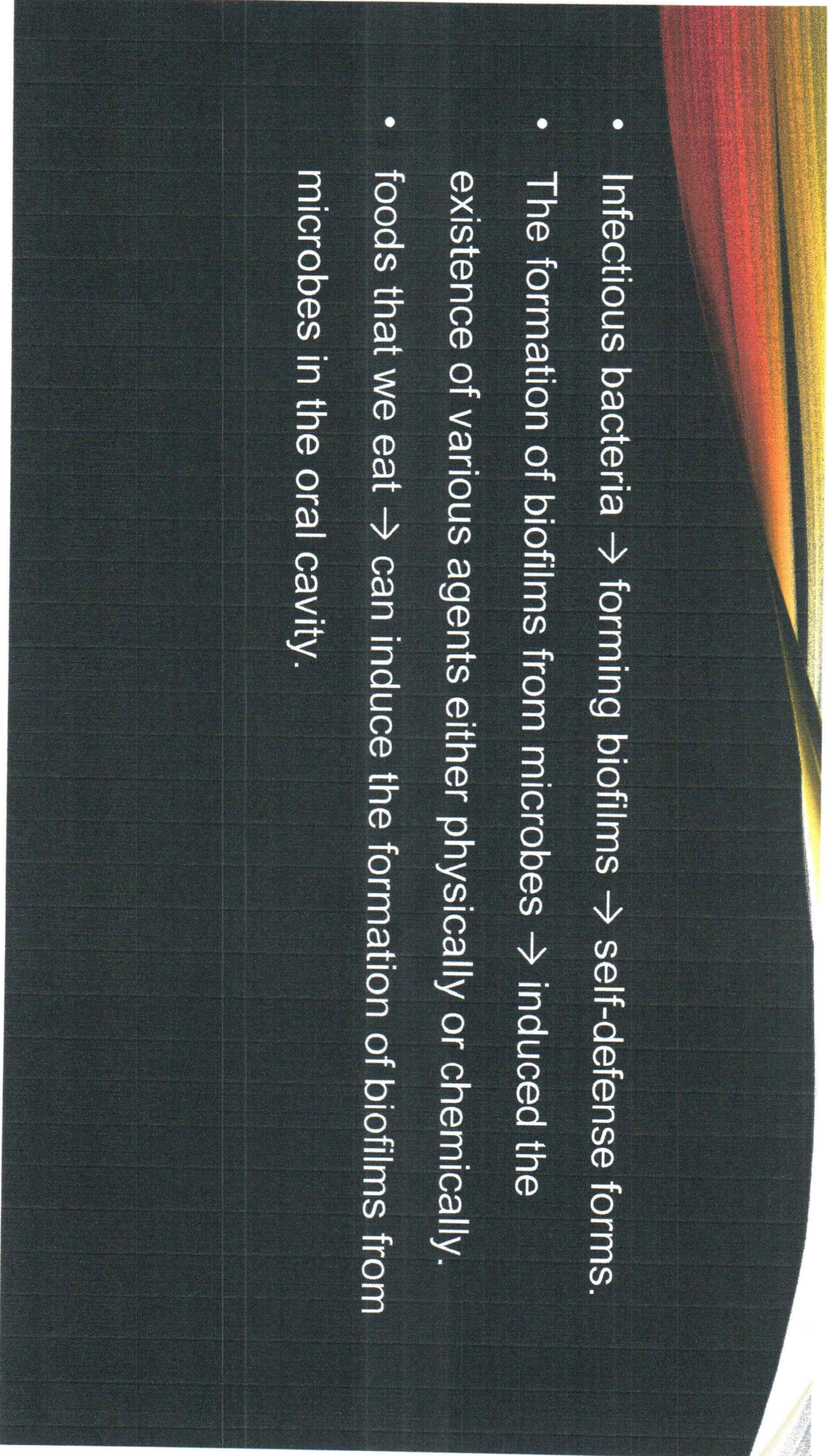
**PERIODONTAL DISEASES DETECTION WITH
Aggregatibacter actinomycetemcomitans
BIOFILM**


Indah Listiana Kriswandini
Departemen of Oral Biology
FACULTY OF DENTISTRY
AIRLANGGA UNIVERSITY
TIMNAS 2017



LATAR BELAKANG

- The prevalence of aggressive periodontitis in Indonesia is good enough
- The high prevalence of aggressive Periodontitis with a range of 3% - 10% is present in Brazil, Iraq, Indonesia, and the United States. Cho *et al* (2011).
- The main cause of periodontitis is aggregated bacter actinomycetemcomitans that can be detected in the oral cavity of aggressive periodontitis patients with a very large percentage of about 90% (Paju, 2000).

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- Infectious bacteria → forming biofilms → self-defense forms.
 - The formation of biofilms from microbes → induced the existence of various agents either physically or chemically.
 - foods that we eat → can induce the formation of biofilms from microbes in the oral cavity.



BIOFILM : Buch of microorganisms, especially bacteria, which are attached to a surface & be covered by the carbohydrate inhibitor which is generated by the bacteria itself.
(Madigan, Martinko, Brock, 2006).

- The biofilm composition consist of:
 - microbes
 - extracellular product
 - debris
 - polysaccharides as adhesives
 - water as the main constituent of biofilm.
- (Zhang, Bishop, Kupferle, 1998 *cit.* Christensen, 1989.)

- Polysaccharides produced by microbes to form biofilms are exopolysaccharides (EPS) namely polysaccharides removed from the cell (Sutherland, 2001)

FUNCTIONS OF BIOFILM

- Reserve food
- Attachment
- Self defense

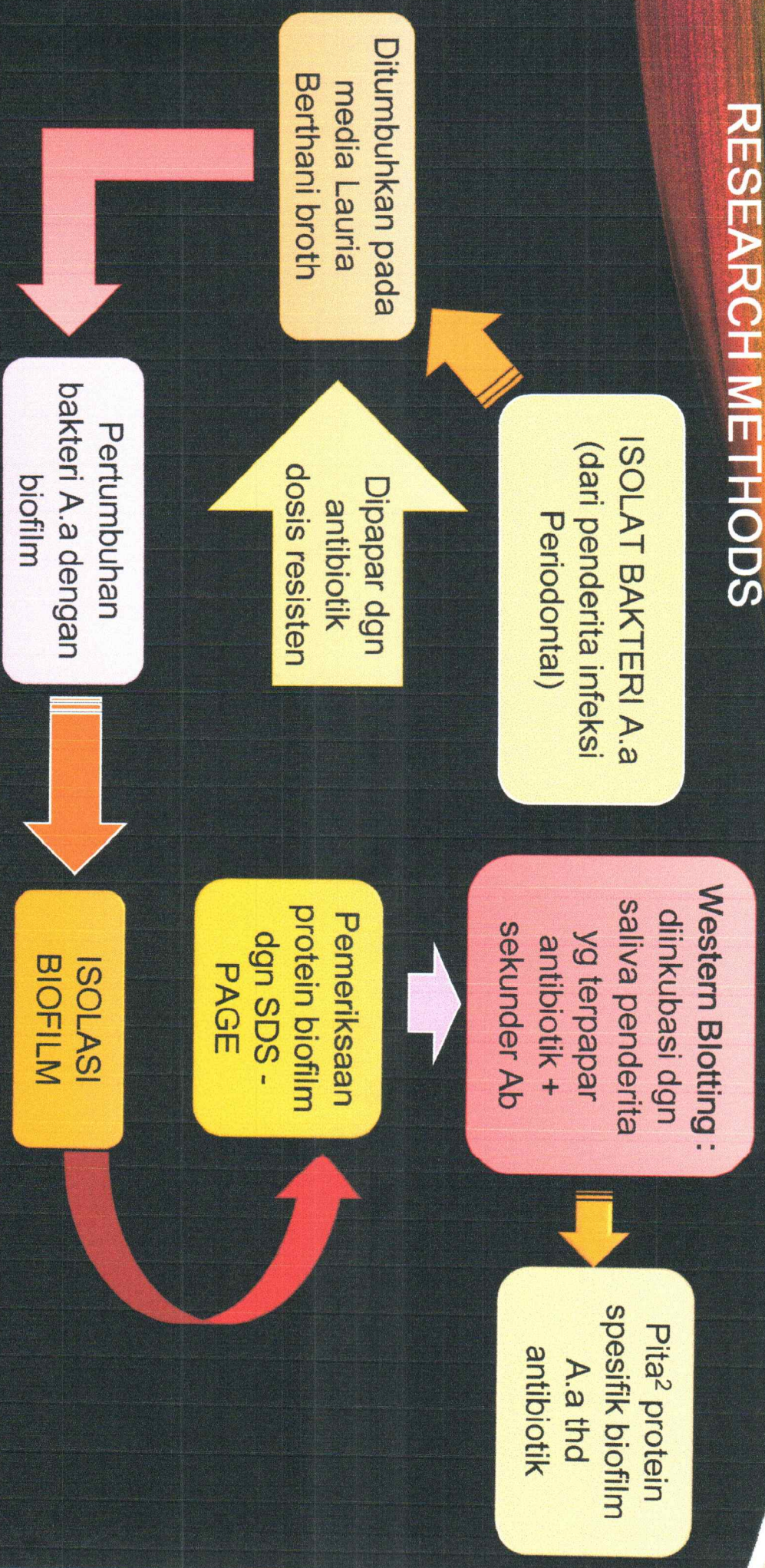
PURPOSE

- The objective of this study was to characterize the molecular weight of Biofilm bacteria *Aggregatibacter actinomycetemcomitans* that exposed to antibiotics : Metronidazole, Clindamycin and Amoxillin.

BENEFITS OF THIS STUDY

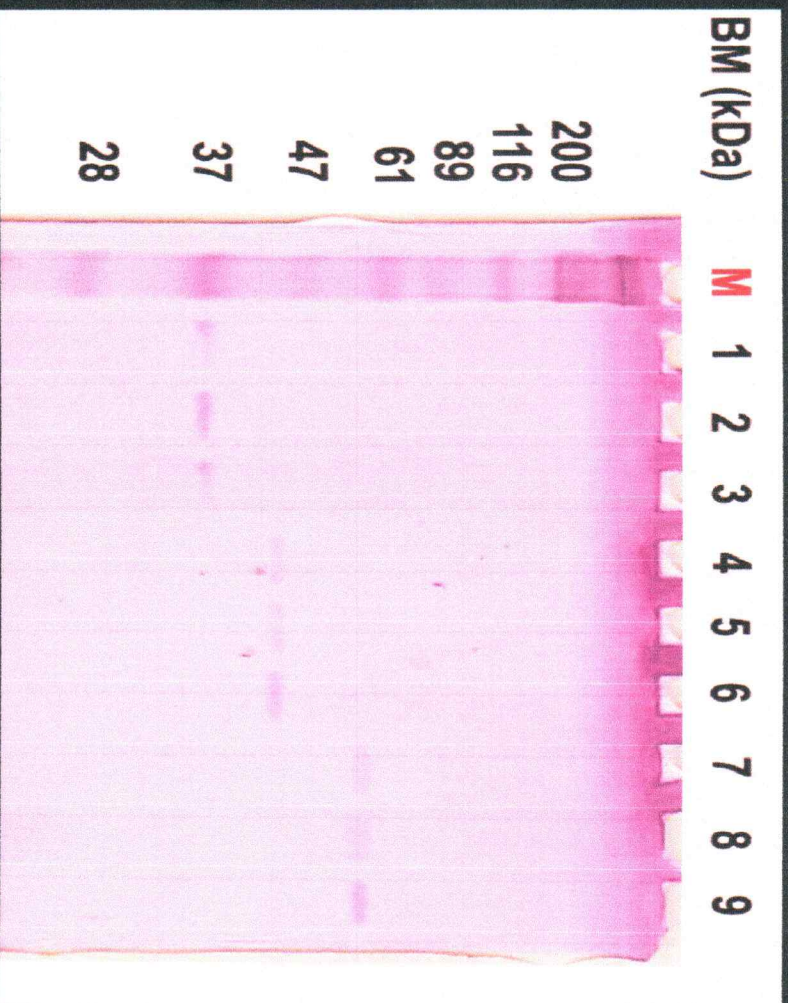
- Can be used to detect the presence of bacteria *Aggregatibacter actinomycetemcomitans* on saliva patients
- As the material of making the kit Detection of Periodontal infection severity

RESEARCH METHODS



HASIL PENELITIAN

UJI SDS - PAGE



Explanations :

M = marker

Line 1, 2 & 3 = the protein band of A.a biofilm that exposed to

Metronidazole (37.6 kDa)

Line 4, 5 & 6 = the protein band of A.a biofilm that exposed to

Clindamycin (48, 1 kDa)

Line 7, 8 & 9 = the protein band of A.a biofilm that exposed to

Amoxicillin (60, 2 kDa)

UJI BLOTTING



EXPLANATIONS :

- The protein band with a 60.2 kDa molecular weight that specific binding to secondary antibodies
- The secondary antibodies use : *Goat anti human slgA-AP conjugate*

DISCUSSION :

- The protein bands on line 1,2 and 3 are the protein bands of saliva patients exposed to Metronidazole (3 different doses).
- Molecular weight that appear is 37,6 kDa, There is mean the component saliva with a Molecular Weight 37.6 kDa bound to the analyte of Metronidazole
- Similarly the protein bands on line 4.5 and 6 contain the protein band of the patient's saliva exposed to Clindamycin (3 different doses). This means that the saliva component with Molecular Weight 48.1 kDa bound to the analyte of Clindamycin

DISCUSSIONS

- The protein bands on line 7, 8 and 9 containing protein bands from saliva patient exposed to Amoxicillin (3 different doses). This means that the salivary component with a Molecular Weight of 60.2 kDa is bound to analyte of Amoxicillin
 - But on the blotting procedure, three protein bands (37.6 kDa ; 48.1 kDa and 60.2 kDa) which can be specifically bound to secondary antibodies is a protein with 60.2 kDa molecular weight.
- This means that only A.a biofilms exposed by Amoxicillin can be used as an indicator of A.a presence in the patient's saliva

CONCLUSIONS

- Protein band with 60.2 kDa molecular weight can be used to detect the presence of A.a in patient saliva