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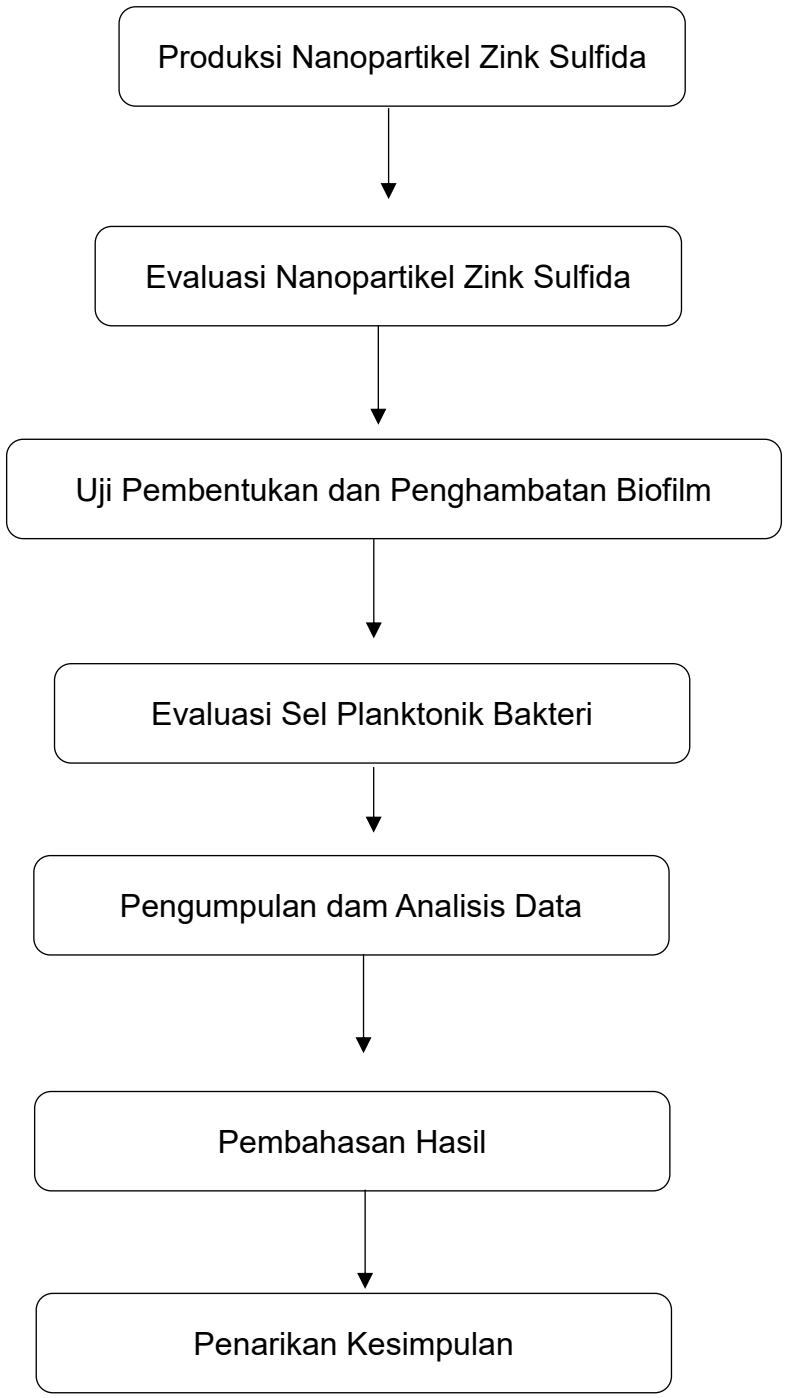
LAMPIRAN 1

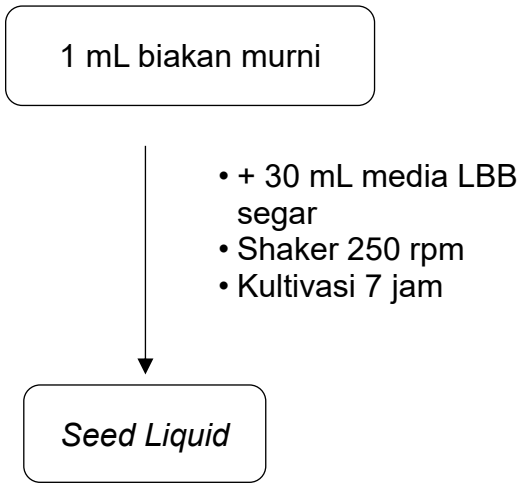
SKEMA KERJA UMUM



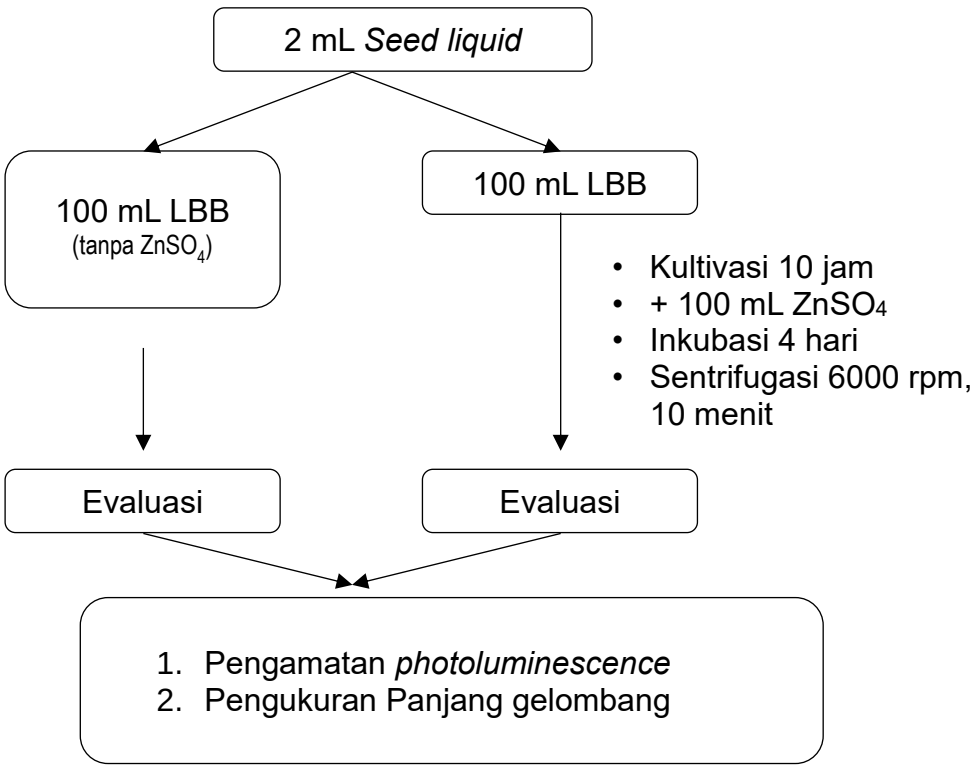
LAMPIRAN 2

SKEMA KERJA PENELITIAN

A. Kultivasi *Seed liquid*



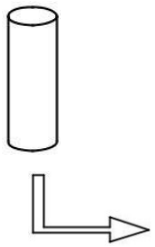
B. Produksi Nanopartikel Zink Sulfida



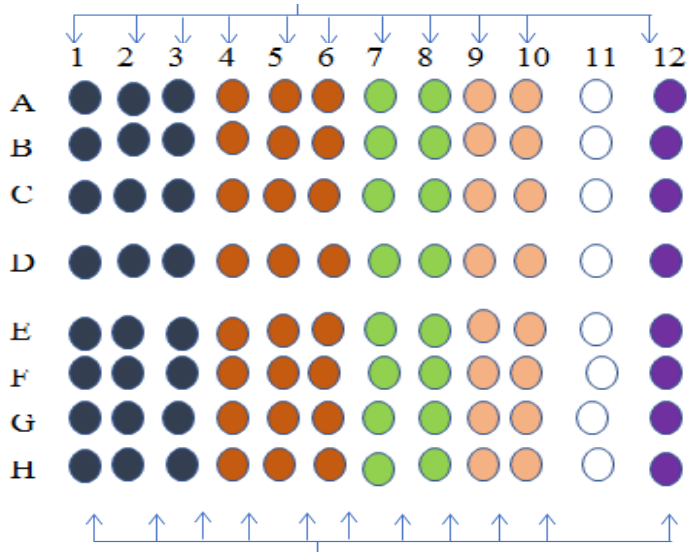
C. Skema Kerja Uji Pembentukan dan Penghambatan Biofilm

1) Dimasukkan 10 µL suspensi bakteri ke dalam microplate

Suspensi bakteri setara dengan 0,5 Mcfarland



2) Diambil 150 µL, 160 µL, dan 170 µL dari nanopartikel zink sulfida



Ket :

- : Penghambatan Biofilm E.coli
- : Penghambatan Biofillm S.aureus
- : Pembentukan Biofilm E.coli
- : Pembentukan Biofilm S.aureus
- : Kontrol Negatif

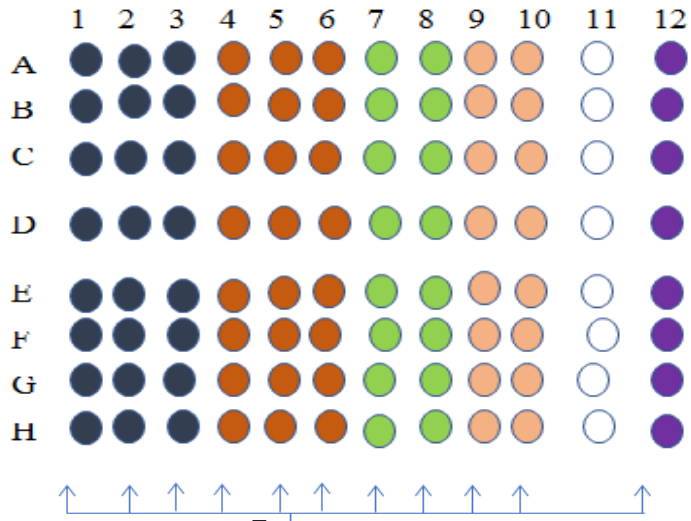
3) Cukupkan volume hingga 200 µL dengan medium NB steril
4) *Microplate* diinkubasi selama 1x24 jam pada suhu 37º
5) Dibilas dengan air sebanyak 3 kali

Lapisan Biofilm

6) Ditambahkan 200µL larutan kristal violet 0,1%
7) Inkubasi 15 menit, larutan kristal violet dibuang lalu dibilas dengan air sebanyak 3 kali
8) *Microplate* diisi dengan 200 µL Larutan asam asetat 30%
9) Diukur menggunakan *microplate reader* dengan panjang gelombang 515 nm

Persentase Penghambatan Biofilm

D. Evaluasi Sel Planktonik Bakteri secara Kualitatif



1) Sel plantonik dari masing-masing well dipindahkan kedalam tabung eppendorf

2) 0,1 ml sel planktonik dimasukkan kedalam cawan petri berisi medium NA yang telah padat lalu disebar menggunakan *spreader*
3) Diinkubasi selama 1x24 jam pada suhu 37ºC.
4) Amati ada atau tidak adanya koloni bakteri

Ada atau tidak adanya koloni bakteri

LAMPIRAN 3

Perhitungan

Tabel 3 Hasil perhitungan persentase penghambatan biofilm *Escherichia coli*

Perlakuan	V1 (150 µl)	V2 (160 µl)	V3 (170 µl)	Pembentukan
1	0,029	0,037	0,034	0,098
2	0,035	0,036	0,041	0,081
3	0,034	0,047	0,043	0,086
4	0,037	0,032	0,043	0,086
5	0,032	0,037	0,040	0,079
6	0,038	0,038	0,042	0,083
7	0,036	0,037	0,044	0,069
8	0,031	0,031	0,039	0,105
Jumlah	0,272	0,295	0,304	6864
Rata-rata	0,034	0,036	0,038	0,0858
% penghambatan	60 %	57 %	56 %	

$$\% P = \frac{absorbansi\ biofilm - absorbansi\ sampel}{absorbansi\ biofilm} \text{ X } 100\ \%$$

Volume 150 µl

$$\% P = \frac{absorbansi\ biofilm - absorbansi\ sampel}{absorbansi\ biofilm} \text{ X } 100\ \%$$

$$\% P = \frac{0{,}085 - 0{,}034}{0{,}085} \text{ X } 100\ \%$$

$$\% P = 60\ \%$$

Volume 160 µl

$$\% P = \frac{absorbansi\ biofilm - absorbansi\ sampel}{absorbansi\ biofilm} \text{ X } 100\ \%$$

$$\% P = \frac{0{,}085 - 0{,}036}{0{,}085} \text{ X } 100\ \%$$

$$\% P = 57\ \%$$

Volume 170 µl

$$\frac{absorbansi\ biofilm - absorbansi\ sampel}{absorbansi\ biofilm} \text{ X } 100\ \%$$

$$\frac{0{,}085 - 0{,}038}{0{,}085} \text{ X } 100\ \%$$

$\% P = 56\ \%$

Tabel 4 Hasil perhitungan persentase penghambatan biofilm *Staphylococcus aureus*

Perlakuan	V1 (150 µl)	V2 (160 µl)	V3 (170 µl)	Pembentukan
1	0,034	0,031	0,026	0,068
2	0,041	0,024	0,028	0,058
3	0,043	0,027	0,026	0,061
4	0,043	0,021	0,019	0,049
5	0,040	0,022	0,020	0,049
6	0,042	0,024	0,020	0,045
7	0,044	0,020	0,021	0,047
8	0,039	0,023	0,021	0,078
Jumlah	0,326	0,192	0,181	0,455
Rata-rata	0,040	0,024	0,022	0,056
% penghambatan	41 %	65 %	67 %	

Volume 150 µl

$$\% P = \frac{absorbansi\ biofilm - absorbansi\ sampel}{absorbansi\ biofilm} \text{ X } 100\ \%$$

$$\% P = \frac{0{,}056 - 0{,}040}{0{,}056} \text{ X } 100\ \%$$

$\% P = 41\ \%$

Volume 160 µl

$$\% P = \frac{absorbansi\ biofilm - absorbansi\ sampel}{absorbansi\ biofilm} \text{ X } 100\ \%$$

$$\% P = \frac{0{,}056 - 0{,}024}{0{,}056} \text{ X } 100\ \%$$

$\% P = 65\ \%$

Volume 170 µl

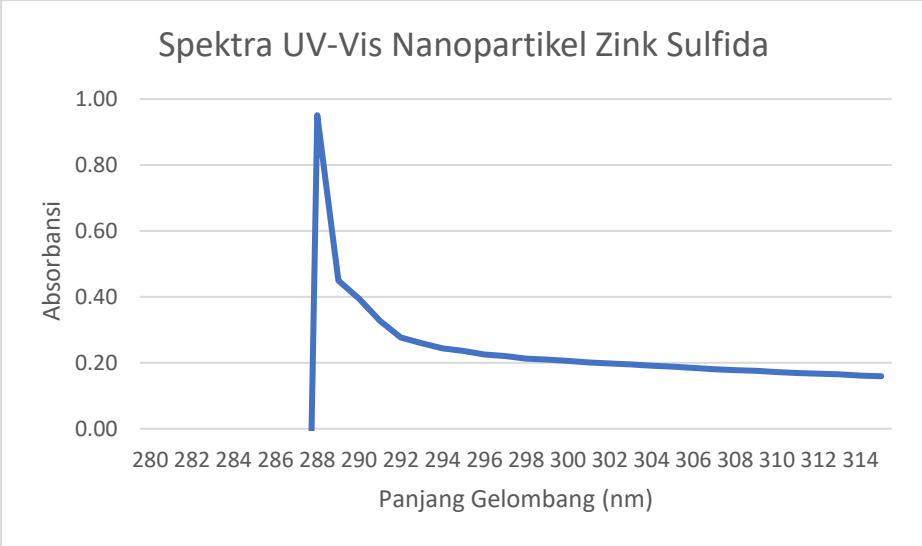
$$\% P = \frac{absorbansi\ biofilm - absorbansi\ sampel}{absorbansi\ biofilm} \text{ X } 100\ \%$$

$$\% P = \frac{0{,}056 - 0{,}022}{0{,}056} \text{ X } 100\ \%$$

7 %

Lampiran 4

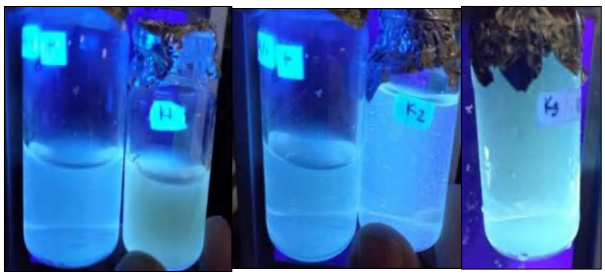
Hasil Pengukuran Spektrofotometri dan Uji Photoluminescence



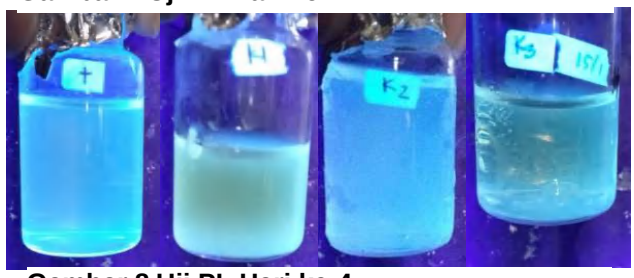
Gambar 5 Grafik hasil pengukuran spektra nanopartikel Zink Sulfida

Gambar 6 Uji PL Hari ke-1

Gambar 7 Uji PL Hari ke-2



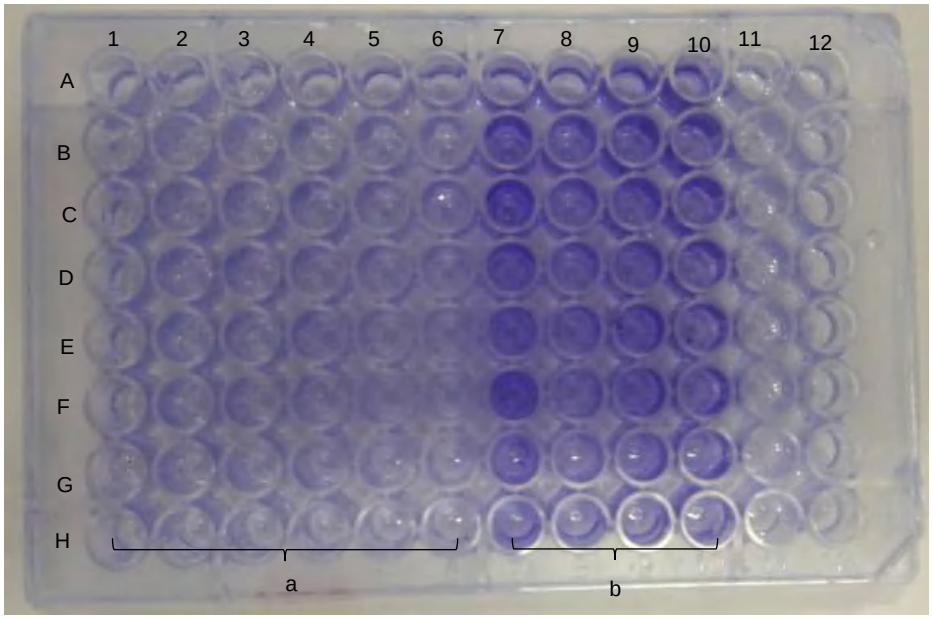
Gambar 9 Uji PL Hari ke-3



Gambar 8 Uji PL Hari ke-4

LAMPIRAN 5

Hasil Pembentukan dan Penghambatan Biofilm *Escherichia coli* dan *Staphylococcus aureus* menggunakan Nanopartikel Zink Sulfida



Gambar 10 Hasil Pembentukan dan Penghambatan Biofilm *Escherichia coli* dan *Staphylococcus aureus* menggunakan Nanopartikel Zink Sulfida

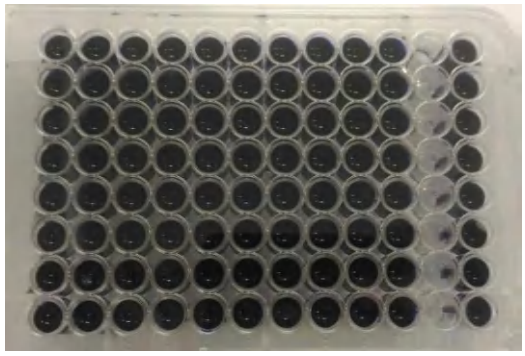
Keterangan:
a. Hasil penghambatan Biofilm
b. Hasil Pembentukan Biofilm
1. Medium+*E.coli*+Nanopartikel 150 µL
2. Medium+*E.coli*+Nanopartikel 160 µL
3. Medium+*E.coli*+Nanopartikel 170 µL
4. Medium+*S.aureus*+Nanopartikel 150 µL
5. Medium+*S.aureus*+Nanopartikel 160 µL
6. Medium+*S.aureus*+Nanopartikel 170 µL
7. Pembentukan Biofilm *E.coli*
8. Pembentukan Biofilm *E.coli*
9. Pembentukan Biofilm *S.aureus*
10. Pembentukan Biofilm *S.aureus*

LAMPIRAN 6

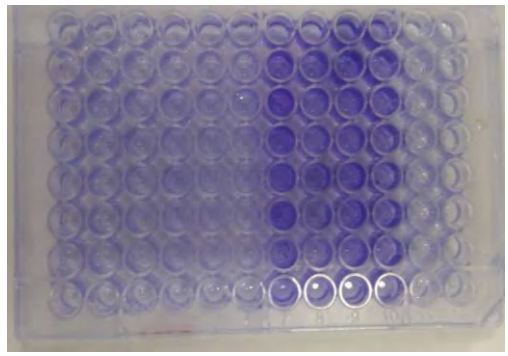
Dokumentasi Kegiatan

Gambar 11 Medium Lbb

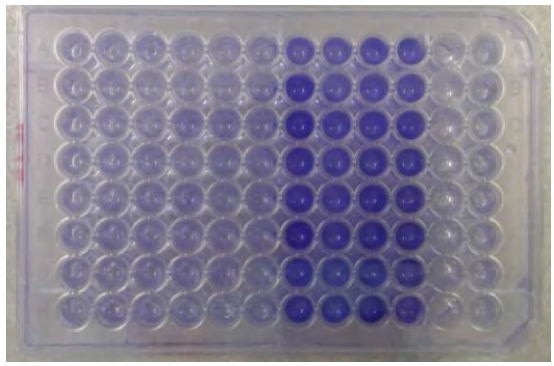
Gambar 12 Medium LBB Setelah penambahan *E.Coli* dan $ZnSo_4$



(a)

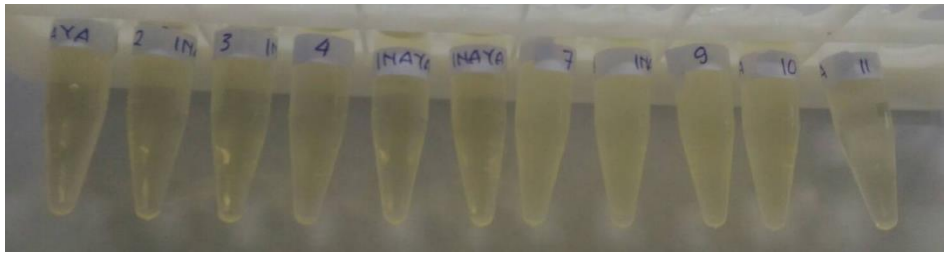


(b)



(c)

.3 Hasil pengujian pembentukan dan penghambatan biofilm pada microplate. h penambahan larutan kristal violet 0,1 % (b) setelah pencucian, (c) setelah han larutan asam asetat 30%



Gambar 14 Supernatan yang akan diuji sel planktonik


PDF
Optimization Software:
www.balesio.com