

PIL 1

by Mohamad Agus Salim

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CERTIFICATE OF PRESENTATION

This is to certify that

Mohamad Agus Salim

has successfully presented on 15 December 2017 a paper entitled

**Microalgae *Haematococcus pluvialis* protect against
Naphthalene-induced Cataract Formation in Mice Lens**

as part of the Short Course on Academic Skills,
which was organised by the Ministry of Religious Affairs of the Republic of Indonesia
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**MICROALGAE *Haematococcus pluvialis*
PROTECT AGAINST NAPHTHALENE INDUCED
CATARACT FORMATION IN MICE LENS**

Presented on 15 December 2017

Mohamad Agus Salim



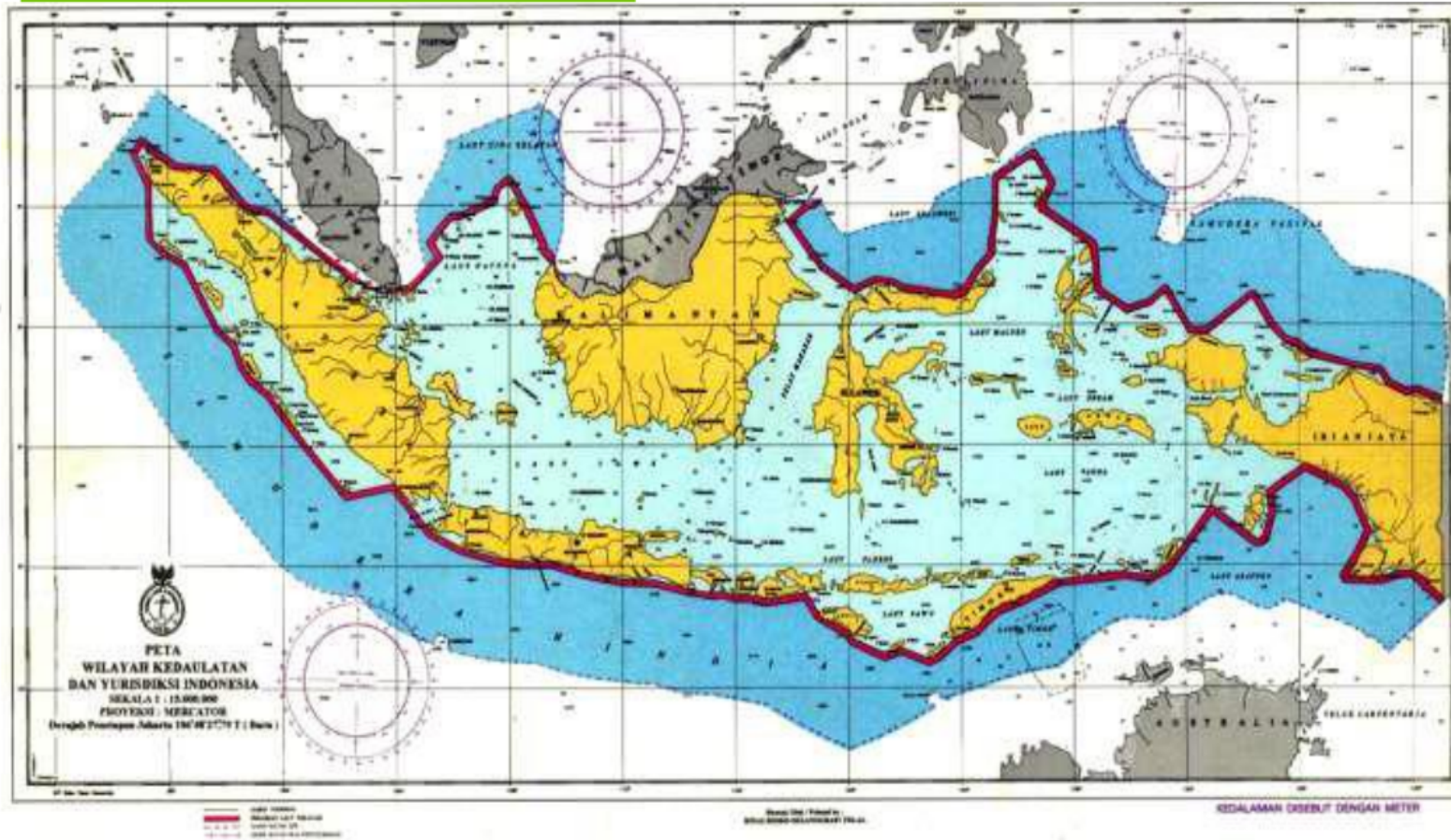
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Indonesia:

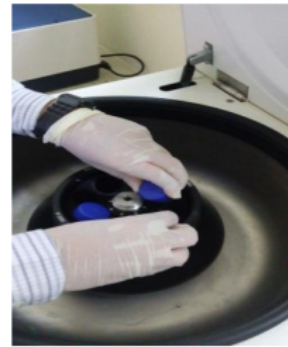
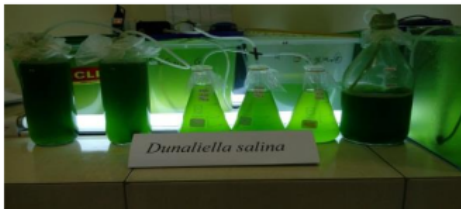
62 % water

**+/- 18.110
islands,
108.900 km
coastline**

**5100 km from
Aceh to
Papua**



Microalgae Culture



A microalgae from the family of red algae, rich in antioxidant compounds such as flavonoid, β carotene, vit E and C, phenolic compounds, chlorophyll and especially phycoerithrin.



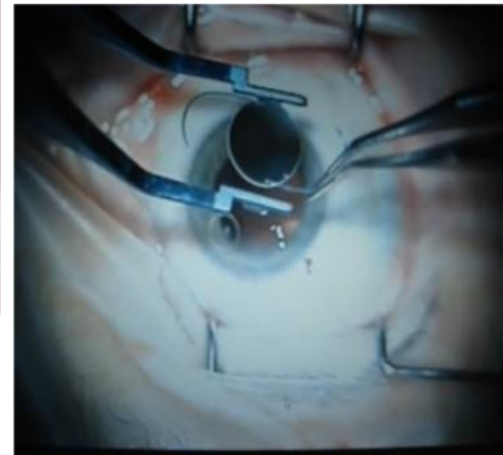
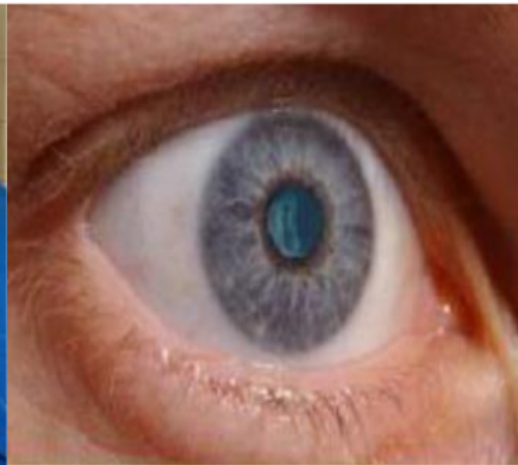
Porphyridium cruentum



Cataract development is a gradual process but it can occur rapidly.

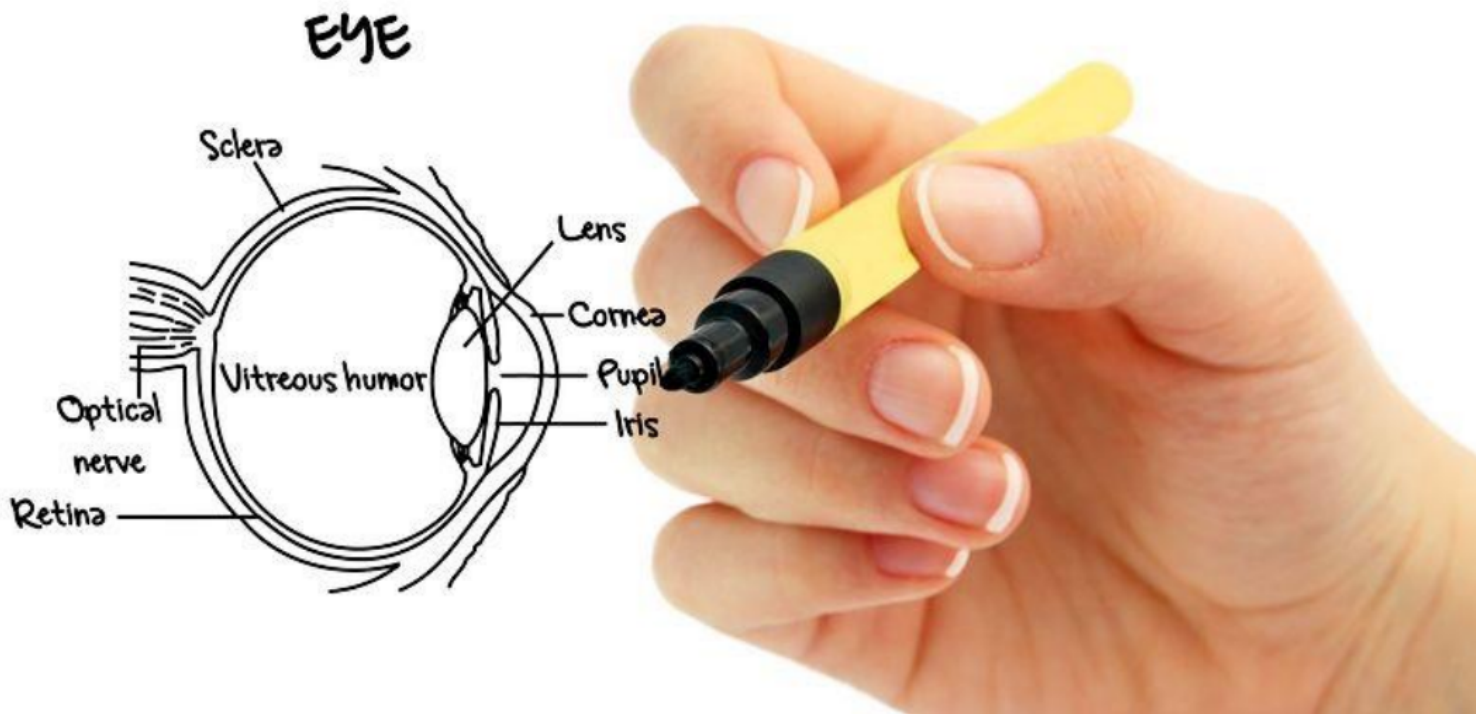


The remedy of cataract is surgery.
Problems of surgery: long waiting lists, costs, risks of complication and lack of technical equipment.



Backlog in Indonesia:

- cataract patients: 210,000 people/year
- only 80,000 people/year undergo surgery



Cataract risk factors

-  • age > 40 year
-  • genetic
-  • diabetes
-  • drugs
-  • sunlight
-  • smoking
-  • alcoholic beverages

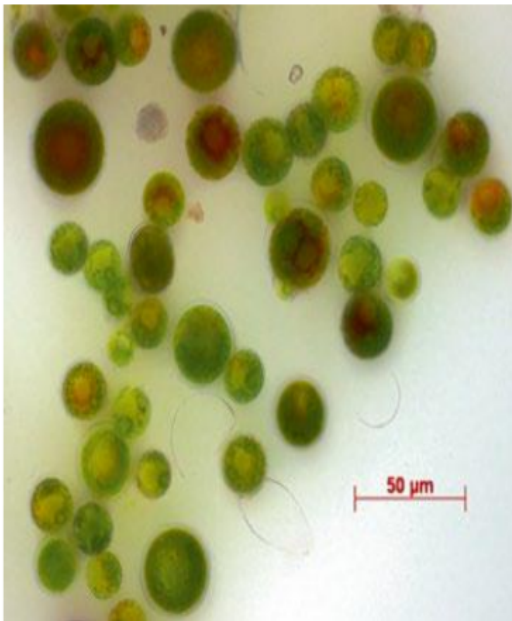


It is estimated that a 10-year delay would reduce the need for surgery by 50%.



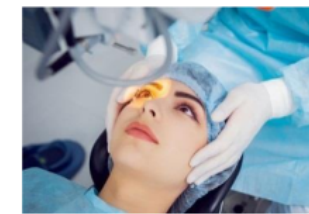
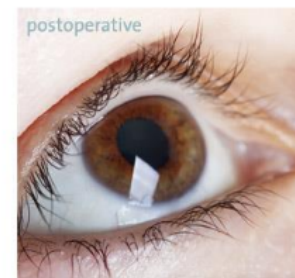
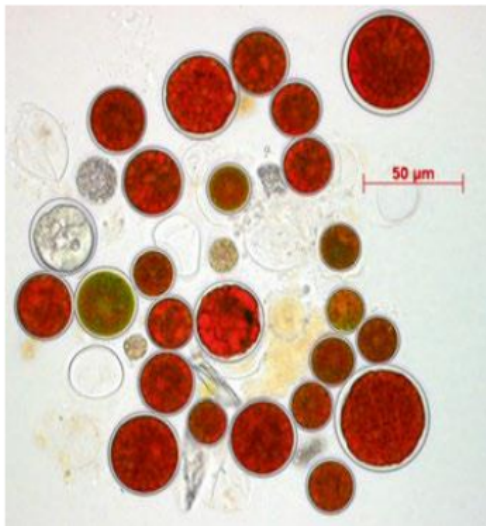
Research Objectives

- Study the potentiality of *P. cruentum* to protect against cataract formation in mice lens



- Develop an alternative method to surgery for the treatment of cataract

Contribution



Experimental Design

G1 : Aquabidest 2cc p.o)

G2 : Naphthalene 1 g/kg BW/day (0,5 g/kg BW/day in 3 days early)

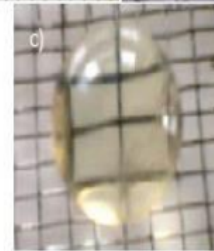
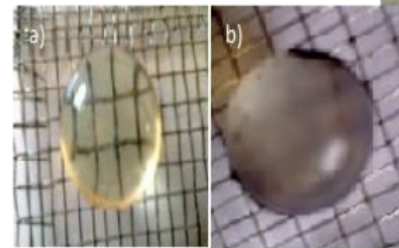
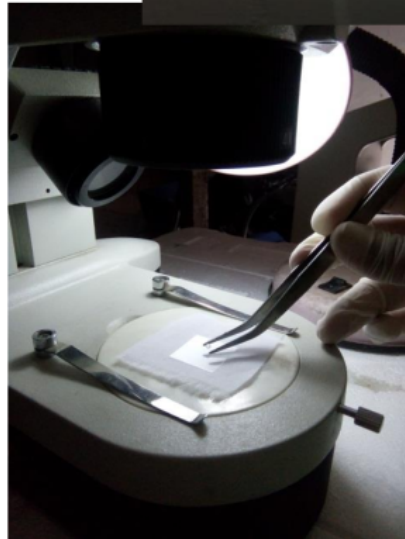
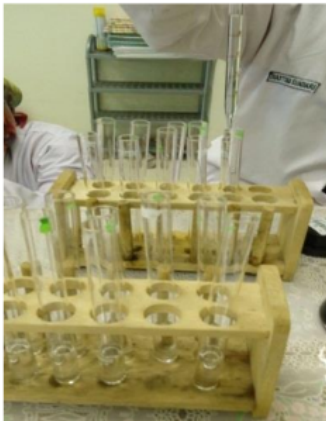
G3 : P. cruentum 1g/kg BW/day

G4 : P. cruentum 1g/kg BW/day + Naphthalene 1g/kg BW/day



DEGREE OF OPACIFICATION

THE LENS SOLUBLE PROTEIN & WATER CONTENT



1 STATISTICAL ANALYSIS



Values are presented as mean \pm SEM. Results were compared by one-way ANOVA followed by Duncan's test. A value of $p < 0.001$ was considered significant

RESULTS

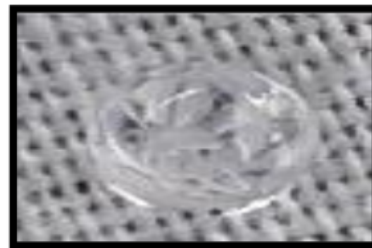
Group	Treatment	Soluble Protein (x 10 ⁻³ µg/ml)	Water Content (%)
G1	Control	0,48 ± 0,04	59 ± 4.67
G2	<i>P. cruentum</i>	0,49 ± 0,03	60 ± 7,31
G3	Naphthalene	0,39 ± 0,01	30 ± 10,54
G4	<i>P. cruentum</i> + Naphthalene	0,42 ± 0,02	53 ± 11,30

Group	Treatment	Degree of opacification
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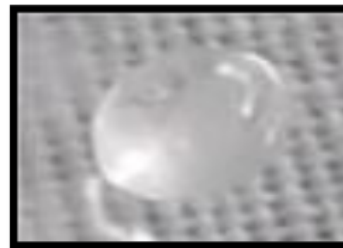
G 1 :	Control	0
G 2 :	P. cruentum	0
G 3 :	Naphthalene	+++
G 4 :	P. cruentum +Naph	+



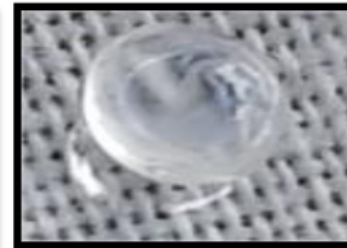
G1



G2



G3



G4

Conclusion

P. cruentum biomass can prevent the cataract progression in naphthalene-induced cataract models.

Thank you for listening
I hope you found it interesting

PIL 1

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