

# C32 Turnitin L. R. Telly Savalas

*by* Lalu Rudyat Telly Savalas C32

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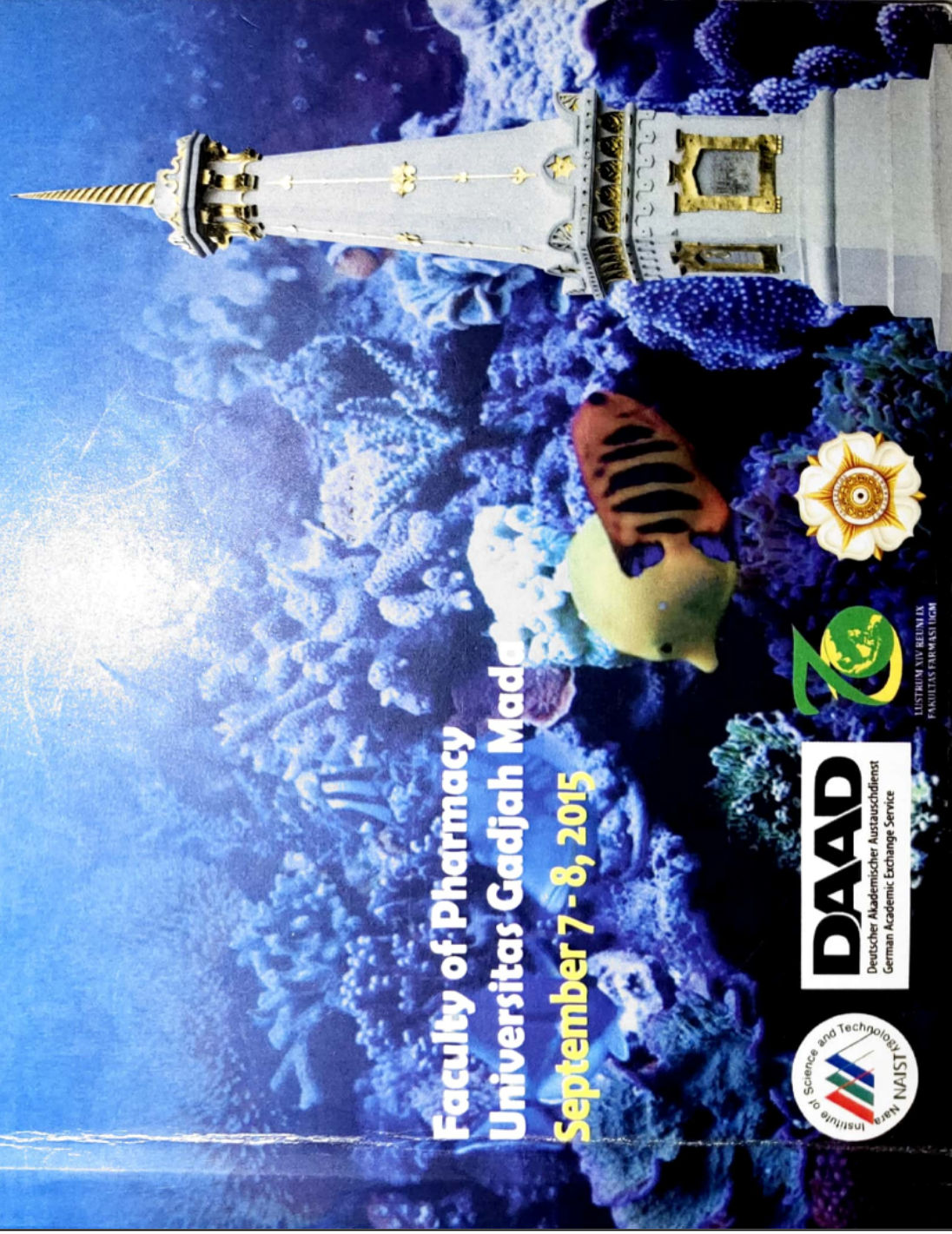
# PROGRAM BOOK

THE 4<sup>th</sup> INTERNATIONAL CONFERENCE ON  
PHARMACY AND ADVANCED  
PHARMACEUTICAL SCIENCES

Faculty of Pharmacy  
Universitas Gadjah Mada  
September 7 - 8, 2015



LISTRUM XIV BEUNJAJ  
FASULTAS FARMASI UGM

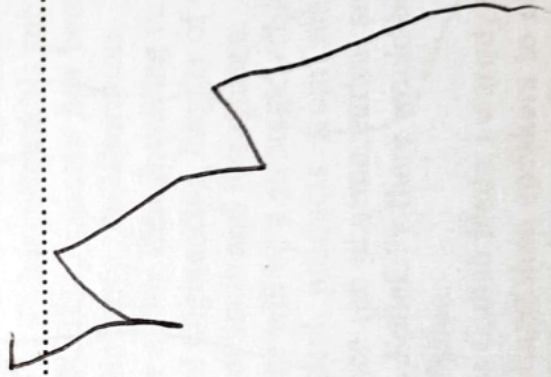




Tally

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## WELCOME MESSAGE

Prof. Ir. Dwikorita Karnawati, M.Sc., Ph.D.  
RECTOR OF UNIVERSITAS GADJAH MADA

Assalamualaikum wr. Wb.

Dear ICPAPS attendees.

First of all, with my deepest gratitude, I would like to welcome all of you in Yogyakarta to attend and participate The 4th International Conference on Pharmacy and Advanced Pharmaceutical Sciences (ICPAPS 2015) with the theme of, "Integrating Socio-entrepreneurship in Marine Development for Sustainable Pharmacy". This conference is very important among us, not only to gain the very recent progress in the field of Pharmacy and Pharmaceutical sciences but also to exchange of knowledge and experiences in the pharmaceutical development worldwide.

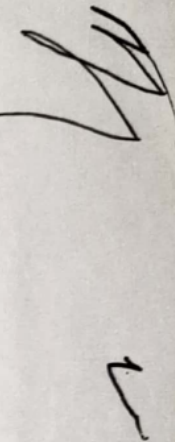
Universitas Gadjah Mada committed to be a world class university through intensively supporting the development of science and technology for sustainable society. In this regard, Faculty of Pharmacy UGM as a leading agent which excel in the health and pharmaceutical field in Indonesia has been taking a part actively in developing the society for the sustainable life. In UGM, this mission is carried out together and integratively through multidisciplinary approaches. The theme of this conference hopefully will encourages us to achieve this purpose.

As long as we know, marine potency of Indonesia is a great comparative advantages to be developed and utilized. Marine potency is an unlimited source for bioactive and pharmaceuticals substances which need to be further explored in UGM. This resource has been seriously studied and developed by multidisciplinary collaboration. This collaborative program has been initiated for a long time involving various faculties such as Faculty of Biology, Faculty of Engineering, Faculty of Agriculture, Faculty of Pharmacy, and also Faculty of Socio and Humaniora.

Indeed, this conference will be a strategic vehicle to strengthen the development of pharmaceutical products from marine resources of Indonesia as well as to advance the pharmaceutical services, which have been deemed as the key issue. Hopefully there would be an effective value in excelling the program and mission.

Finally, on behalf of Universitas Gadjah Mada, I warmly welcome and thank all of the participants and distinguished speakers to of ICPAPS 2015. We are looking forward to having intensively productive discussion on the interaction among various parties concerning this theme. I wish you all good luck and have a productive discussion.

Wassalamualaikum wr. Wb.





## Welcome Message from the Committee

Assalamu'alaikum wr wb,

May the peace blessings and mercy of Allah SWT be upon you,

First of all, let us praise to the Almighty Allah SWT, because of His Blessing we are able to attend this opening ceremony of the International Conference on Pharmacy and advanced pharmaceutical sciences today.

It is a great honor for me to welcome you all in our conference. Welcome to our beloved city Yogyakarta, and we hope you will enjoy your time here. This conference is the fourth international conference conducted by Faculty of Pharmacy Universitas Gadjah Mada to facilitate the experts meeting and sharing the knowledge among the researchers, academia, college students, policy makers in corresponding fields, and practitioners.

This year, The 4<sup>th</sup> International Conference on Pharmacy and Advanced Pharmaceutical Sciences (ICPAPS 2015) will bring up the captivating theme: **"Integrating Socio-entrepreneurship in Marine Development for Sustainable Pharmacy"**, as a respon to the increasing attention for marine pharmaceuticals. The conference is conducted in collaboration with German Academic Exchange Service (DAAD) and Nara Institute of Technology Japan. We would like to express our deep gratitude to our international collaborating partners.

As a key note speaker in this conference, we are fortunate to have Prof. Dr. Ir. Dwisuryo Indroyono Susilo, M.Sc. He is the former Indonesia Minister of Coordinating Maritime Affairs. We also invited 15 more experts in various field of pharmacy and pharmaceutical sciences, either from Indonesia or overseas, who will give their inspiring lectures. In parallel, a Focus Group Discussion highlights on Marine Pharmacy will also be conducted which covers Academics-Business-Community-Government aspects in order to establish strong collaboration links.

Here, among 300 participants, there are 148 presenters will present their recent research finding, which are divide into two big topics, Pharmaceutical Science and Technology and Clinical and Social Pharmacy. Our high appreciation and sincere gratitude are delivered to all speakers and presenters who enthusiastically participate in our conference.

The organizing committee deeply acknowledges The Rector of Universitas Gadjah Mada, German Ministry for Economic Cooperation & Development (BMZ), German Academic Exchange Service (DAAD) and Nara Institute of Technology Japan as well as to all of our sponsors for the invaluable supports to the conference. As the chairman of the committee, I personally would like to express our high appreciation and gratitude to all team members who has put all the hard work, dedication, and extraordinary efforts for the success of the conference.

Finally, we do hope that this conference will give a strong contribution to the pharmacy and pharmaceutical science development in Indonesia and worldwide, we also hope that all participants could gain benefit from this event and we wish you an enjoyable moment in Yogyakarta.

Wassalamu'alaikum wr wb.

Chairman

Triana Hertiani

*The 4<sup>th</sup> International Conference on Pharmacy and Advanced Pharmaceutical Sciences*      i  
Yogyakarta, Indonesia, September 7-8, 2015



## REMARK

Dean, Faculty of Pharmacy, Gadjah Mada University

Dear participants

On behalf of civitas academica of the Faculty of Pharmacy, Universitas Gadjah Mada – Yogyakarta, we'd like to welcome all the participants in our beautiful city of Yogyakarta – Indonesia, and specifically at the 4<sup>th</sup> International Conference on Pharmacy and Advanced Pharmaceutical Sciences (ICPAPS-2015).

This ICPAPS meeting will focus on marine development that is parallel to that of the Republic of Indonesian Policy. As we all notice that 2/3 of Indonesia is ocean that is not completely developed for Indonesian welfare; therefore, "Integrating Socio-entrepreneurship in Marine Development for sustainable Pharmacy" is the selected theme for this meeting. This meeting provides opportunities for everyone concerns on the marine development and also of course on the recent Pharmacy development on the world. Participants are encouraged to discuss with our outstanding invited speakers and possibly build a mutual collaboration in future.

We appreciate to our outstanding invited speakers for spending their time to share their knowledge, the participants who present their papers and posters as well and to the committee who have been working very hard preparing this meeting. Finally, we'd love to say Enjoy Yogyakarta, the culture and center of education city, rich with variety food all over the city.

Sincerely,

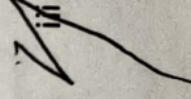
Subagus Wahyuono, Ph.D.  
Dean, Faculty of Pharmacy  
Universitas Gadjah Mada  
Yogyakarta - INDONESIA



## Organizing Committee

<b>Steering Committee</b>	: Prof. Dr. Subagus Wahyuono, SU, Apt. Prof. Dr. Umar Anggara Jenie, M.Sc, Apt. Prof. Dr. Edy Meiyanto, Apt. Dr. Hilda Ismail, MSi, Apt. Prof. Dr. Agung Endro Nugroho, M.Si, Apt. Dr. Satibi, MSi, Apt. Dr. Ratna Asmah Susidarti, M.Si, Apt. Prof. Dr. Zullies Ikwati, Apt.
<b>International Partners</b>	: Prof. Dr. Peter Proksch (Heinrich-Heine University, Jerman) Prof. Masashi Kawaichi (NAIST, Japan)
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<b>Chairman</b>	: Dr.rer.nat. Triana Hertiani, M.Si., Apt.
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<b>Secretary II</b>	: Dr. Rer.nat. Ronny Martien, M.Si. <del>Dr. Ririq Rohman, M.Sc, Apt.</del>
<b>Treasury</b>	: Dr. Tri Murni Andayani, SpFRS, Apt.
	<b>Divisions</b>
<b>Events</b>	: Dr. Nunung Yuhia ri, M.Si., Apt.
<b>Scientific &amp; proceeding</b>	: Dr. Abdul Rohman, MSi., Apt. Dr.Susi Ari Kristina, M.Kes, Apt
<b>Equipments</b>	: Dr. TN Saefullah, MSi., Apt.
<b>Refreshments</b>	: Angi Nadya Bestari, M.Sc., Apt.
<b>Accommodation</b>	: Irfan Muris Setiawan, M.Si., Apt.
<b>Advance Course Pharmaceutical Science (ACPS)</b>	: Prof. Dr. A. Khairis Nugroho, MSi, Apt.

The 4<sup>th</sup> International Conference on Pharmacy and Advanced Pharmaceutical Sciences  
Yogyakarta, Indonesia, September 7-8, 2015



Mataram II  
East Mataram I, East Mataram II

**Forum Group Discussion (Marine Pharmacy)**

Venue  
Mataram III

**15.00-15.30**      **Coffee Break**      **Venue Foyer**

**15.30-17.00**      **Poster Session**

Venue

: Corridor #1 and Corridor #2

**Parallel Session III**

Venue

Mataram I, Mataram II, West Mataram I, West  
Mataram II

EastMataram I, East Mataram II

**Tuesday, September 8, 2015 – Day II**

**08.00- 09.30**

**Symposia III**

Venue

: **Pharmaceutical and Science Technology**  
Mataram I

**Speaker**

**Title**

*Prof. Yasumasas Bessho*

*Somitogenesis in Vertebrate as*

*Biological Clock Model*

*Prof. Naoyuki Inagaki*

**Neuroscience**

**08.00-09.30**

**Poster and Parallel Sessions Clinical and Social Pharmacy**

Venue

Corridor #1 and Corridor #2

**Parallel Session III**

Venue

Mataram I, Mataram II, West Mataram I,  
West Mataram II

EastMataram I, East Mataram II

**Poster Session**

**Coffee Break**

**Symposia V**

Venue

: **Venue Foyer**

: **Pharmaceutical and Science Technology**  
Mataram I

**Speaker**

**Prof.Dr. Umar Anggara Jenie., MSc.,**

**Apt, (Gadjah Mada University,**

**Indonesia)**

Bioethical Implications on Marine

Exploration

**Speaker**

**Prof. Dr. Peter Proksch (Heinrich-Heine**

**University, Duesseldorf, Germany)**

**Title**

Bio-Inspired Leads from Marine Sponges

and Mangrove-Endophytes

**Clinical and Social Pharmacy**

**Symposia VI**

Venue

: **Mataram III**

**Speaker**

**Title**

**Prof. Dr. Zullies Ikwati (Universitas**

**Gadjah Mada)**

Pharmacogenomics of asthma therapy :

from Indonesian study



OP-19.2	Roihatul Mutiah	Comparison The Anticancer Effect of Extract And Fraction <i>Calotropis gigantea</i> Radix On Human Colon Cancer WiDr And Breast Cancer T47D Cell Lines
OP-19.3	Rosidah	Combinasion Effect of Ethylacetate Extract of <i>Plectranthus amboinicus</i> (Lour.) Spreng With Doxorubicin Against HeLa Cell Lines
OP-19.4	Savalas, L.R.T	The roles of MTb modulator proteins in the development of latent TB infection: an update
OP-19.5	Yuni Fajar Esti	ANTIGEN TOXIC EFFECT OF CINNAMON ESSENTIAL OIL (CEO) ON CHO-K1 CELLS USING MICRONUCLEUS ASSAY
OP-20.1	LAELI MUNTAFIAH	PUMPKIN SEED EXTRACT (PSB) INHIBITS SENESENCE ON M1H 3T3 FIBROBLAST CELLS
OP-20.2	Lalu Rudyat Telly Savalas	The roles of MTb modulator proteins in the development of latent TB infection: an update
OP-20.3	Ziana Walidah	COMBINATION OF JURE LEAVES ETHANOLIC EXTRACT AND CINNAMON ESSENTIAL OIL REVEALS ANTIMETASTATIC EFFECT THROUGH WOUND HEALING AND GELATIN ZYMOGRAPHY ASSAY
OP-20.4	Retno Ariahingrum	PARA HYDROXY META METHOXY CHALCONE (pHmMC) INDUCED APOPTOSIS ON T47D BREAST CANCER CELLS
OP-20.5	Aris Haryanto	Molecular Pathotyping of Newcastle Disease Virus based on Restriction Pattern of Fusion Protein Encoding Gene by using RT-PCR and RFLP Method
OP-5.1	Asri Darmawati	Profile of Mycolic Acid Cleavage Products of Isoniazid Resistant <i>Mycobacterium tuberculosis</i> Isolate by Gas Chromatography-Mass Spectrometry
OP-5.2	Dewi Setyaningsih	A NOVEL HIGH PERFORMANCE LIQUID CHROMATOGRAPHY METHOD TO ACCURATELY DETERMINE LOW CONCENTRATIONS OF CURCUMIN IN RAT PLASMA
OP-5.3	Febri Annuryanti	DEVELOPMENT AND VALIDATION OF HPLC METHOD FOR DETERMINATION OF CURCUMINOIDS IN INDOONESIAN HERBAL DRINKS
OP-5.4	Hudan Taufiq	A Rapid, Simple, and Validated RP-HPLC Method for Quantitative Analysis of Furosemide in Human Plasma
OP-5.5	Riesta Primaharinastiti	Gas Chromatography-Flame Ionization Method Validation for Organochlorine Residues Analysis in Herbs Using QuEChERS Kit

**PARALLEL SESSIONS 2 DAY I (15.30 - 17.00)**



## THE ROLES OF MTB MODULATOR PROTEINS IN THE DEVELOPMENT OF LATENT TB INFECTION: AN UP DATE

Savalas, L.R.T<sup>1)</sup>\*, Lestari, C.A.<sup>2)</sup>, Fikri, B.R.N.<sup>2)</sup>,  
Ardhuha, J.<sup>1)</sup> and Sedijani, P.<sup>1)</sup>

1)\* Faculty of Education, University of Mataram, \*Corresponding Author:

[telly@unram.ac.id](mailto:telly@unram.ac.id);  
2) Dept. of Chemistry, Faculty of Mathematics and Natural Sciences,  
University of Mataram,

Tuberculosis has been and still a global health challenge. Efforts have been made to develop new lines of antibiotics that are more powerful than the conventional drugs, better and faster diagnostics, as well as new vaccines. Increasing attentions have also been given within the last two decades to latent TB infection. In latent TB infection, *Mycobacterium tuberculosis* bacteria are engulfed by macrophages and destined within phagosomes. In normal pathway, the so called phagolysosomes are formed when phagosomes recruit lysosomes and thereby acquires hydrolytic enzymes from the acidic lysosomes compartment. Once they are matured, phagolysosomes are capable of degrading Mtb. On contrary, in latent TB development, MTb bacteria within macrophages are releasing some modulator proteins such as PknG, PknF, PtpA, PtpB, etc. that prevent fusion events between phagosomes and lysosomes. In this case, Mtb bacteria are survive and entering dormant or latent phase where they are growing up very slowly within the phagosomes, and residing there for years without showing infection. In a suppressed immune state, patients could develop TB case. However, the detailed mechanism of phase changes from latent TB to TB case is far from fully understood. The mechanisms by which the secreted modulator proteins interact with host proteins or macromolecules are also being questioned. In this paper, the present understanding in latent TB infection is discussed. Few human host proteins suggested to interact with Mtb modulator proteins are also described. Finally, current research to block Mtb modulator proteins with drugs candidates, including those from marine resources, is presented to give an insight of the broadened areas where scientists might combat MTb.

**Keywords:** *Mycobacterium tuberculosis*, latent infection, phagolysosomes





LUSTRUM XIV REUNI IX  
FAKULTAS FARMASI UGM



# Faculty of Pharmacy Universitas Gadjah Mada

With high appreciation presents

## Certificate

to

### Lalu Rudyat Telly Savalas

As Participant & Oral Presenter


in

## THE 4<sup>th</sup> INTERNATIONAL CONFERENCE ON PHARMACY AND ADVANCED PHARMACEUTICAL SCIENCES

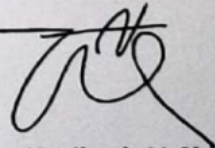
Accredited by Indonesian Pharmacist Association (PP IAI No. 124/SK-SKP/PP.IAI/2015):  
Participant: 12 credits; Oral Presenter/Poster: 3 credits; Speaker: 4.5 credits;  
Moderator: 1.5 credits; Committee: 3 credits

Yogyakarta, September 7 - 8, 2015



  
Prof. Dr. Subagus Wahyuono, M.Sc., Apt.  
Dean of Faculty of Pharmacy - UGM



  
Dr. rer.nat. Triana Hertiani, M.Si., Apt.  
Chairman



# **THE ROLES OF Mtb MODULATOR PROTEINS IN THE DEVELOPMENT OF LATENT TB INFECTION: AN UP DATE**

Savalas, L.R.T<sup>1)\*</sup>, Lestari, C.A.<sup>2)</sup>, Fikri, B.R.N.<sup>2)</sup>,  
Ardhuha, J.<sup>1)</sup> and Sedijani, P.<sup>1)</sup>

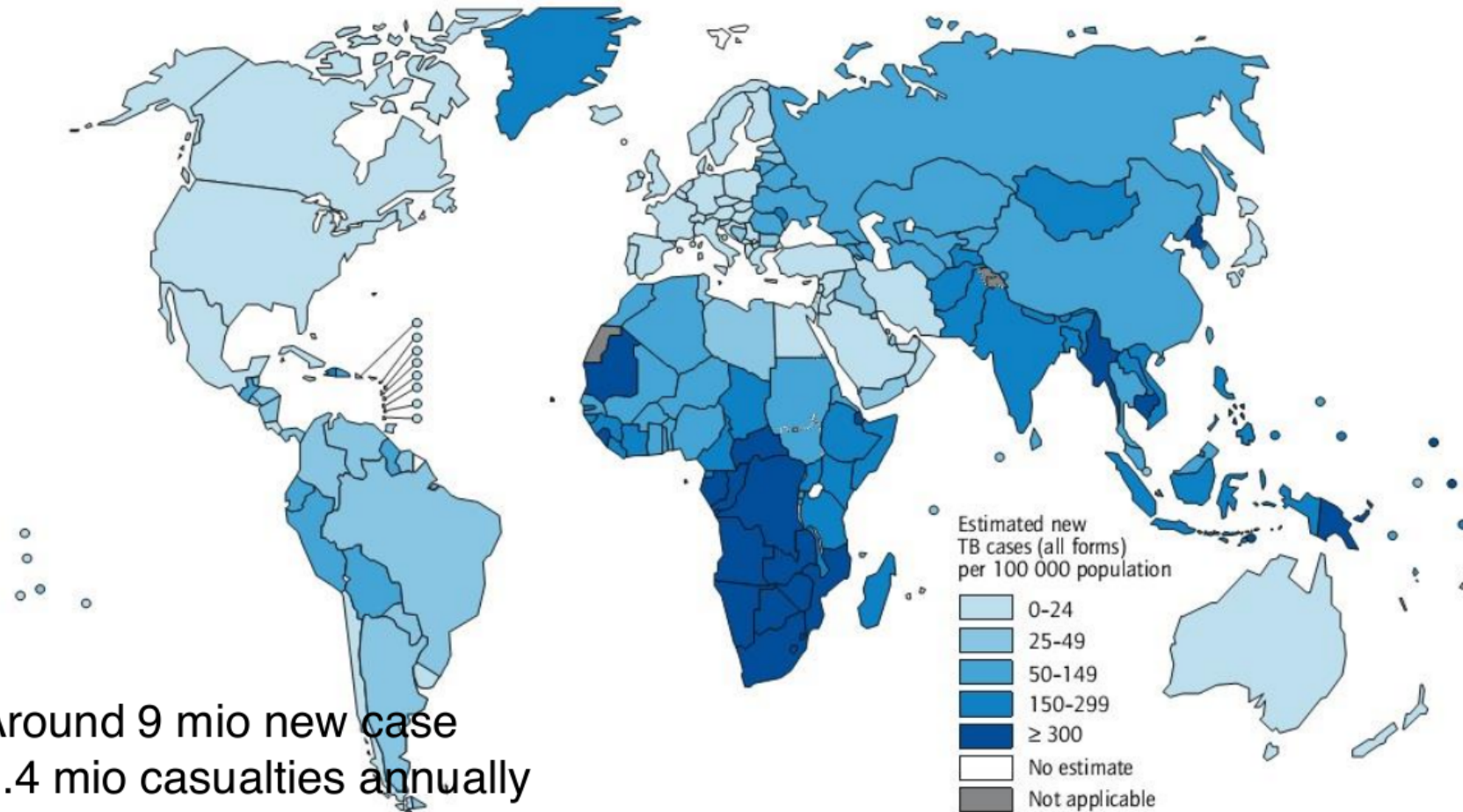
1. FKIP Unram
2. FMIPA Unram



# TUBERCULOSIS



FIGURE 2.5 Estimated TB incidence rates, 2011



- Around 9 mio new case
- 1.4 mio casualties annually
- Infect 1/3 population (WHO)

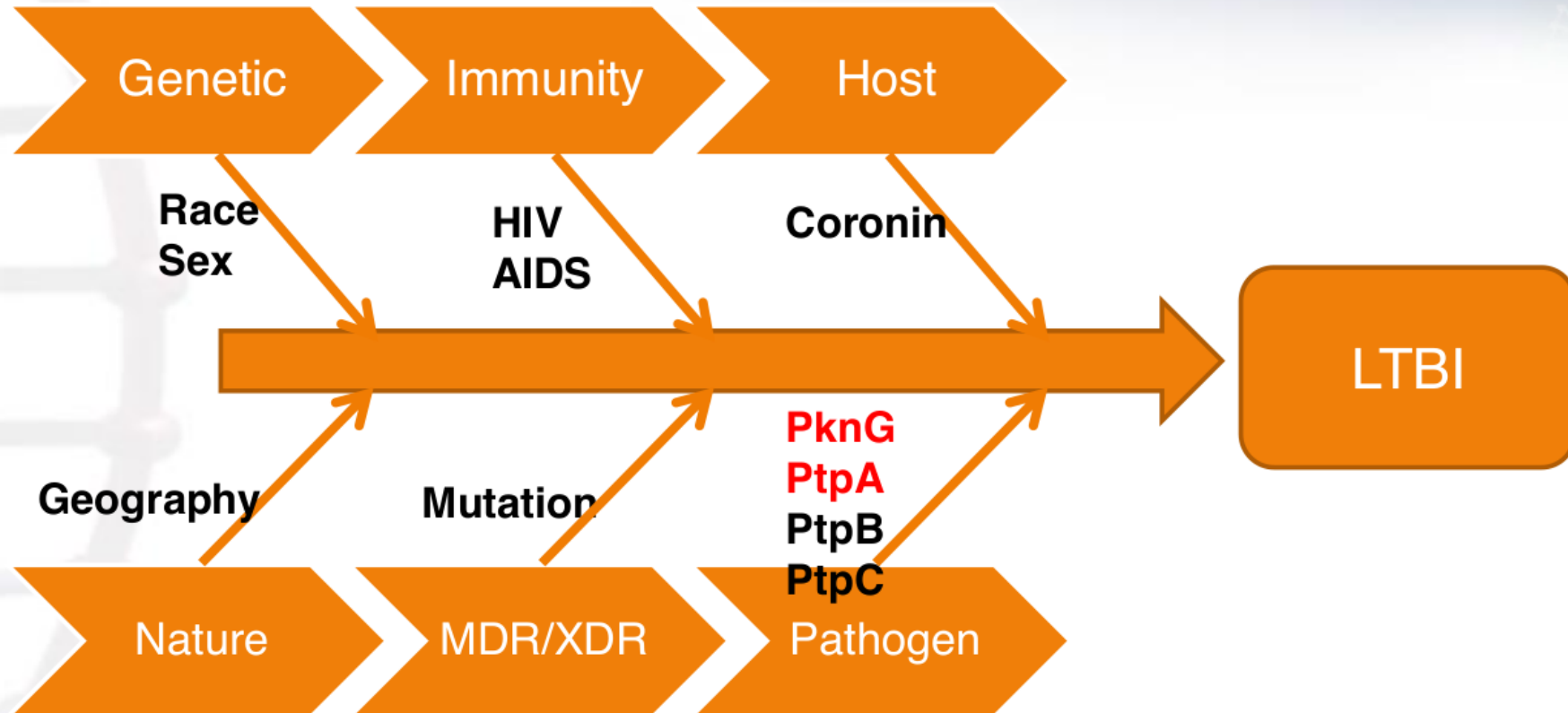
# SEM Image of *M. tuberculosis*



Gram positive, 2-4 micron x 0.2 – 0.5 micron  
[www.news-medical.net](http://www.news-medical.net).



# Road Map



# Latent Tuberculosis Infection (LBTI)



 Microbe

 Host



# Latent Tuberculosis Infection (LTBI)

Microbe →

Host

## Cell walls:

LAM that inhibit PI3 kinase to produce PI(3)P that required of phagosome-lysosome fusion, Mycolic acid

## Secretion of modulator proteins that prevent degradation

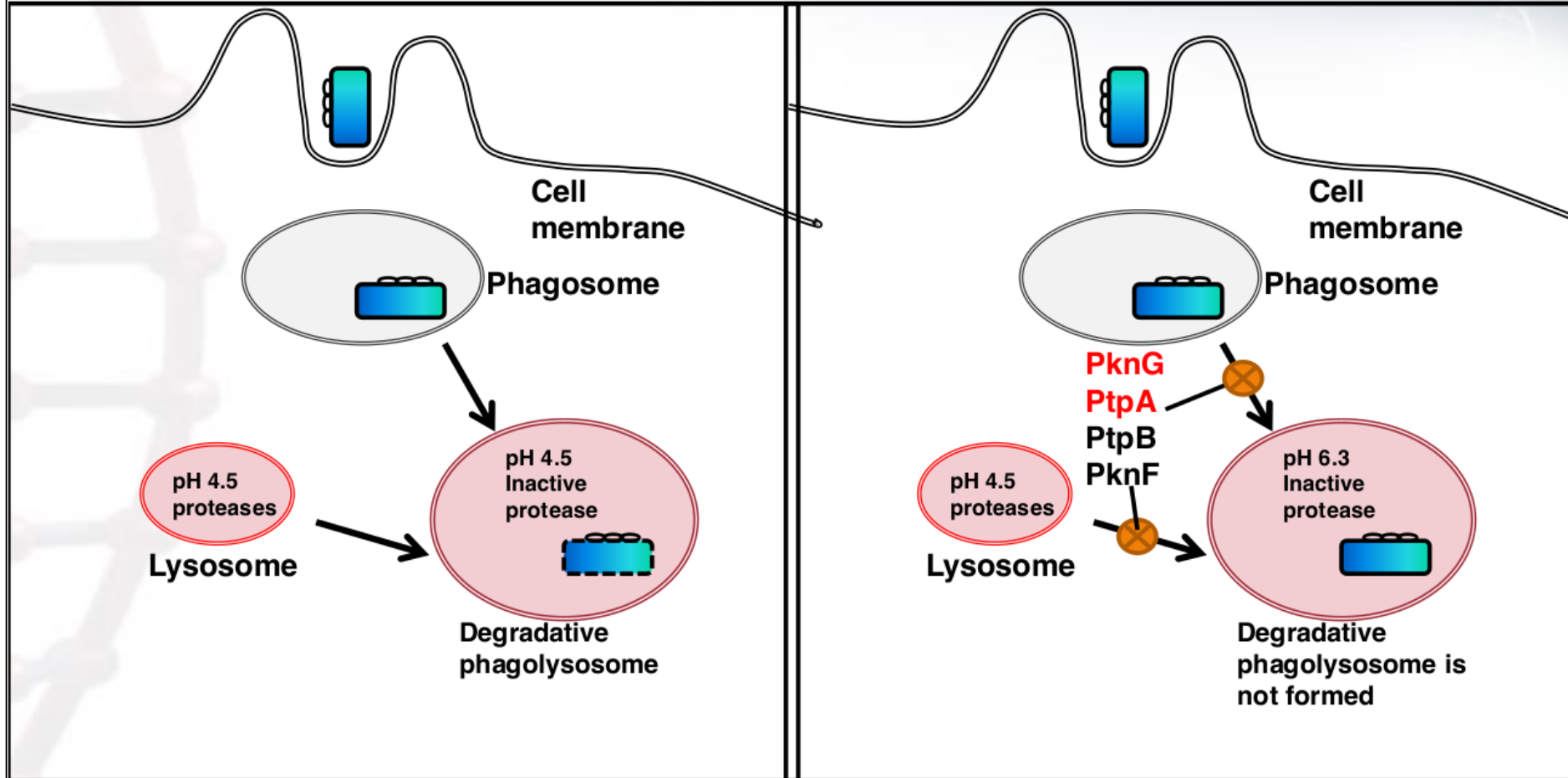
- PtpA
- PtpB
- PknG
- PknF
- etc

# Upon Infection



Degradation

Latent Infection



Inhibition of modulator proteins may provide ways to prevent LTBI



# Latent Tuberculosis Infection (LTBI)



 Microbe

 Host



Coronin (tryptophan-aspartate containing coat protein or TACO) prevent the delivery of phagosome to lysosome

# What we do

1. Construction and expression of Mtb modulator proteins (PtpA, PtpB, PknG)
2. Interaction study of modulator protein with host protein (pull-down, yeast two hybrid screening)
3. Inhibition assays of modulator proteins.  
May also involve bioinformatics





# Pull-Down

SDS-PAGE



GST-PtpB

GST-PtpB-protein X → MALDI-TOF



Compare with data base

# Y2H Clontech, TaKaRa

Pustaka genom sel inang (cDNA library)



Bait/umpan

Gal4  
DNA-BD



PtpA



*Yeast S. cerevisiae*

Prey

Gal4 AD



unknown



<sup>1</sup>  
Prey

Gal4 AD



unknown



Prey

Gal4 AD



unknown



Prey

Gal4 AD



unknown



<sup>1</sup>  
Prey

Gal4 AD



unknown



Gal4 AD

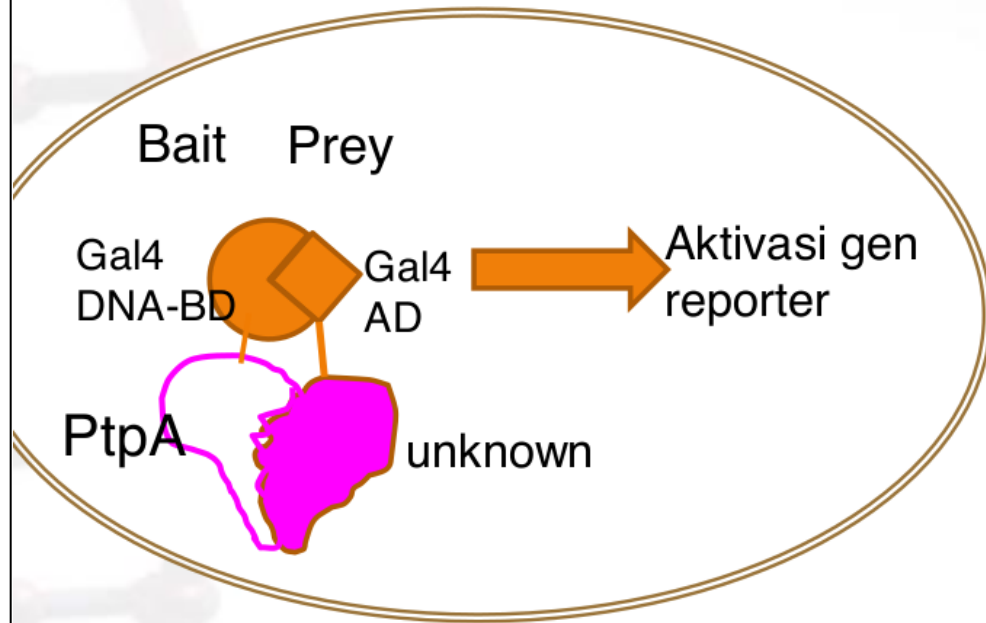


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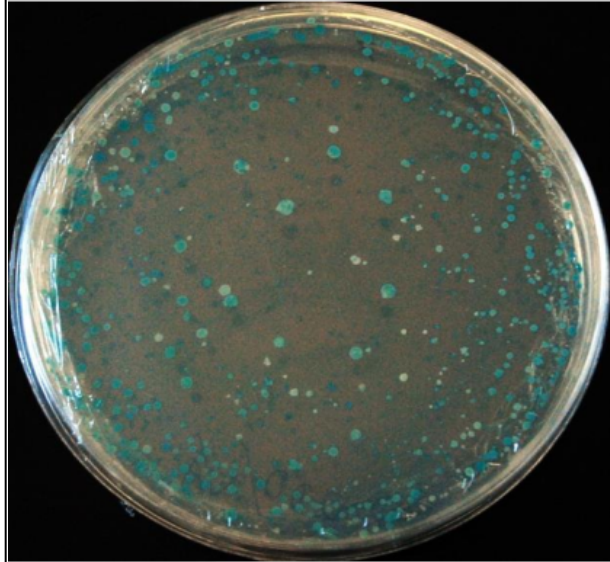


# Yeast two hybrid screening: PtpA

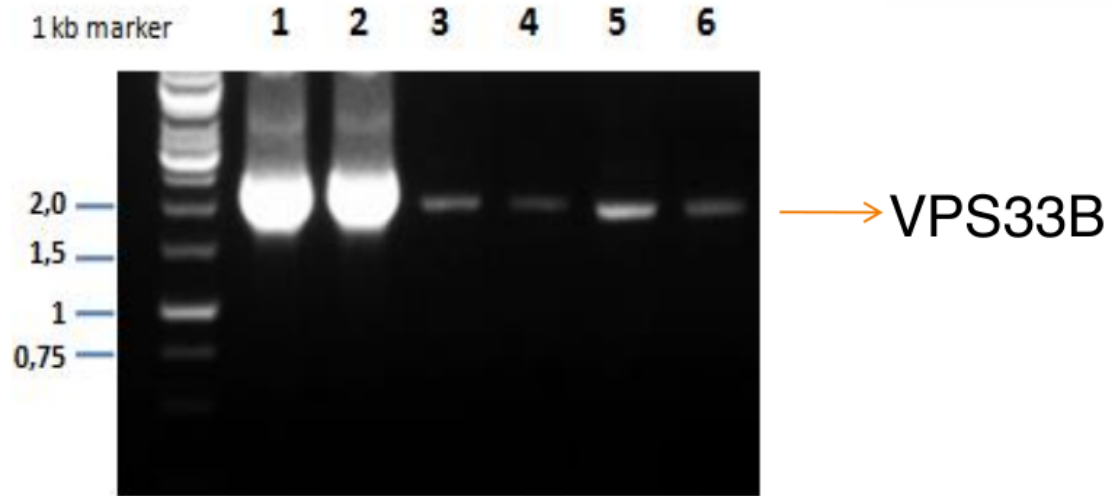


1. Plasmid DNA isolation
2. Sequencing

# Y2H Screening confirms the role of VPS33B



Screening plate



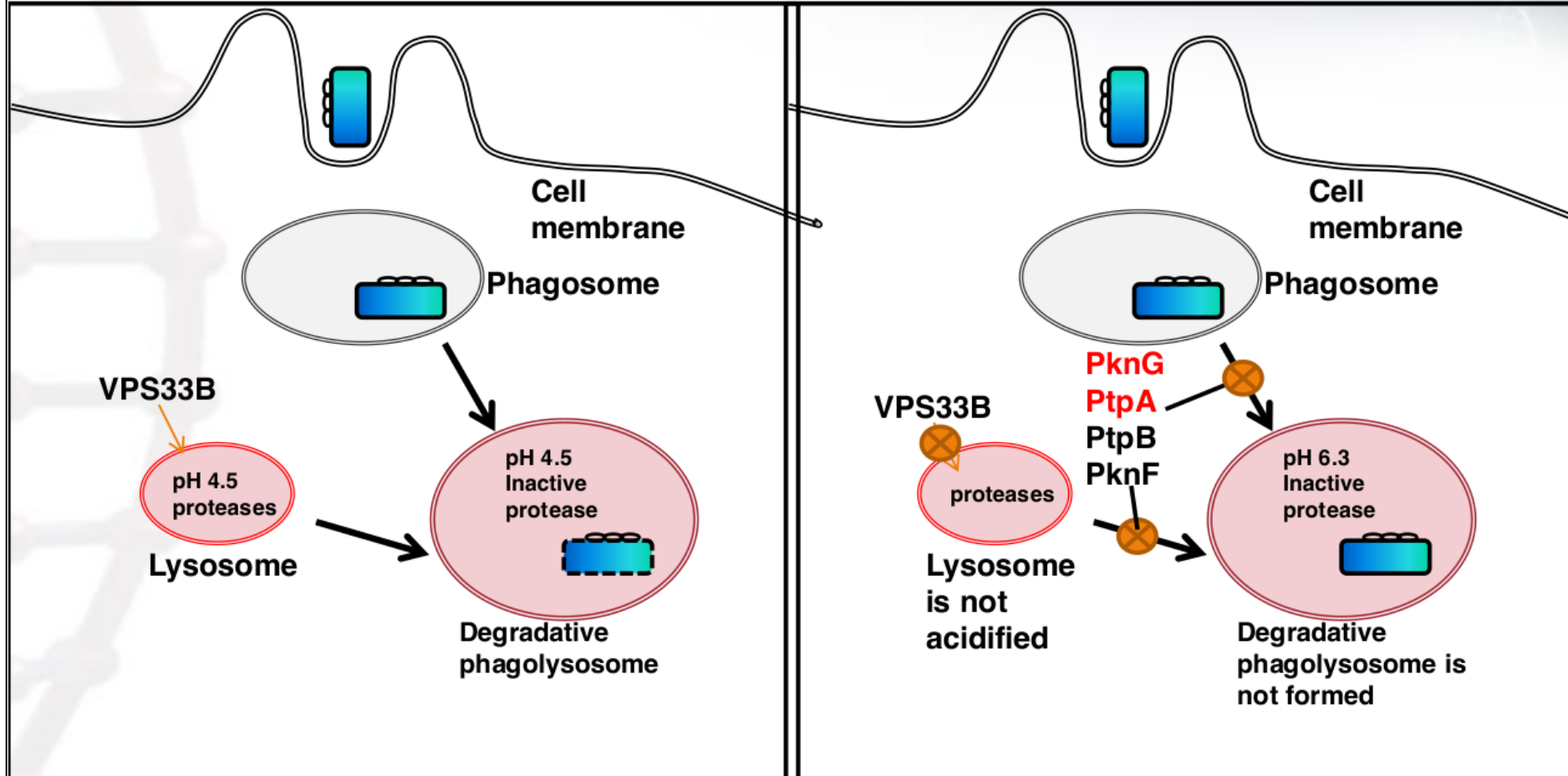


# Upon Infection



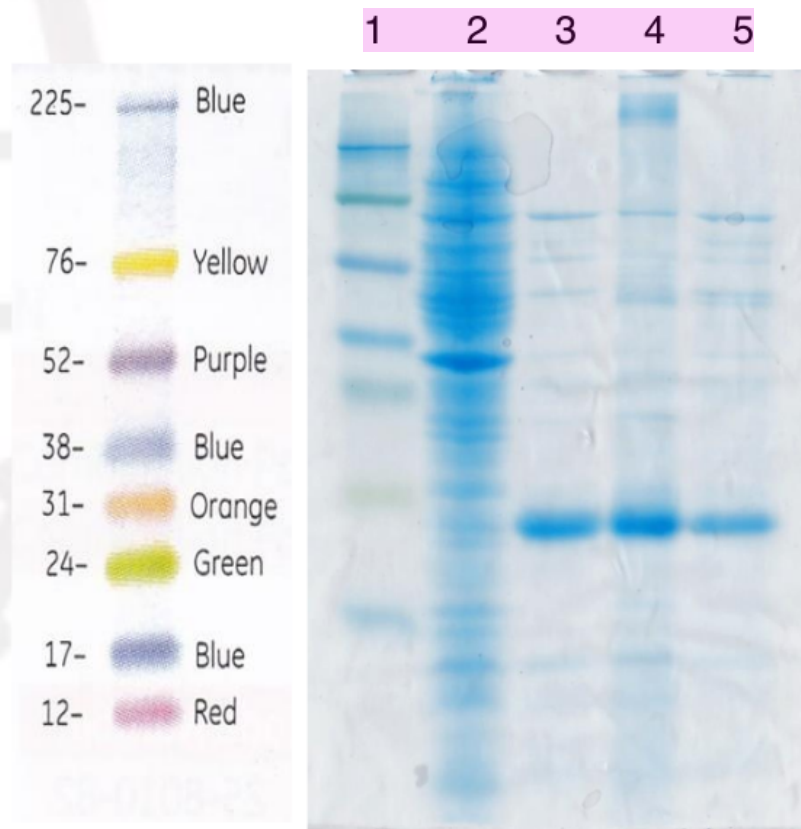
Degradation

Latent Infection



# Expression of PtpA

SDS-PAGE Analysis of PtpA (pET30b-PtpA) expressed in *E. coli* BL21 (DE3)



1. Marker protein
2. *E. coli* BL21 kosong
3. pET30b-PtpA / *E. coli* BL21 protein total
4. Protein PtpA di pelet setelah sonikasi (inclusion bodies)
5. Lisat protein PtpA setelah sonikasi

# Related works

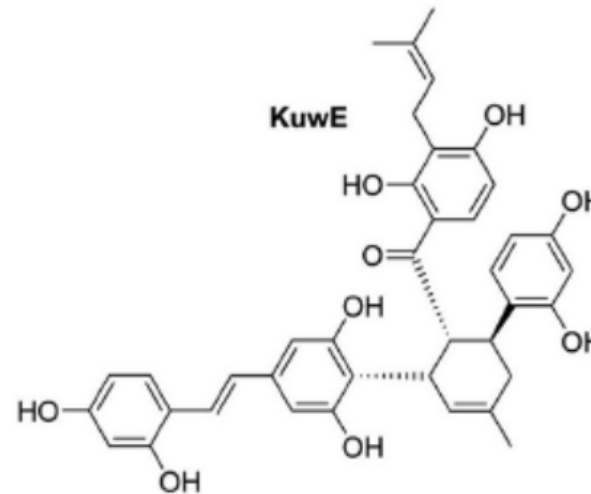
OPEN ACCESS Freely available online

PLOS ONE



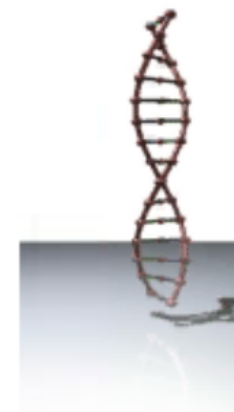
## Discovery of *Mycobacterium tuberculosis* Protein Tyrosine Phosphatase B (PtpB) Inhibitors from Natural Products

Alessandra Mascarello<sup>1</sup>, Mattia Mori<sup>2,3</sup>, Louise Domeneghini Chiaradia-Delatorre<sup>1,4</sup>, Angela Camila Orbem Menegatti<sup>4</sup>, Franco Delle Monache<sup>2</sup>, Franco Ferrari<sup>2</sup>, Rosendo Augusto Yunes<sup>1</sup>, Ricardo José Nunes<sup>1</sup>, Hernán Terenzi<sup>4</sup>, Bruno Botta<sup>2</sup>, Maurizio Botta<sup>3,5</sup>



Kuwanol E





PROCEEDINGS

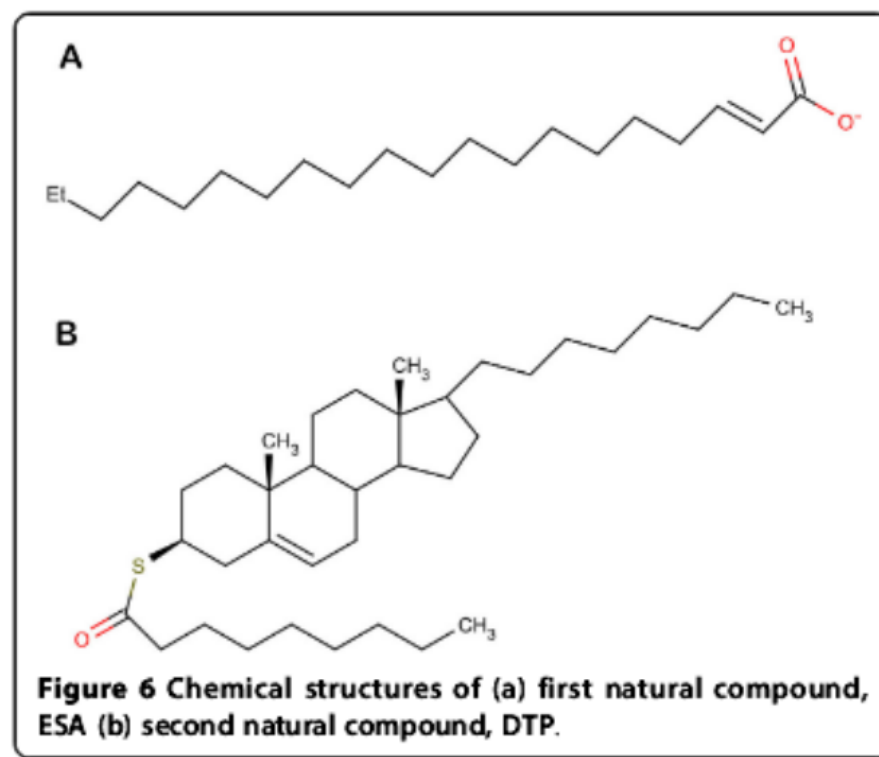
Open Access

# Structural insights into mode of actions of novel natural Mycobacterium protein tyrosine phosphatase B inhibitors

Jaspreet Kaur Dhanjal<sup>1</sup>, Sonam Grover<sup>1</sup>, Sudhanshu Sharma<sup>2</sup>, Ajeet Kumar Singh<sup>3</sup>, Abhinav Grover<sup>1\*</sup>

From The Twelfth Asia Pacific Bioinformatics Conference (APBC 2014) Shanghai, China. 17-19 January 2014

trans-2-eicosenoic acid (A)  
can inhibit PtpA (unpublished)





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## Peniphenones A-D from the Mangrove Fungus *Penicillium dipodomyicola* HN4-3A as Inhibitors of *Mycobacterium tuberculosis* Phosphatase MptpB

Article

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Peniphenones A-D from the Mangrove Fungus *Penicillium dipodomyicola* HN4-3A as Inhibitors of *Mycobacterium tuberculosis* Phosphatase MptpB

*Org Lett.* 2013 Feb 15;15(4):721-3. doi: 10.1021/ol303549c. Epub 2013 Jan 29.

**Asperterpenoid A, a new sesterterpenoid as an inhibitor of *Mycobacterium tuberculosis* protein tyrosine phosphatase B from the culture of *Aspergillus* sp. 16-5c.**

[Huang X<sup>1</sup>](#), [Huang H](#), [Li H](#), [Sun X](#), [Huang H](#), [Lu Y](#), [Lin Y](#), [Long Y](#), [She Z](#).

# Terima Kasih

## Group Structure

Dr. rer. nat. Lalu Rudyat Telly Savalas

Prapti Sedijani, Ph.D

Dinde Sofie, M.Si. (RA)

Ni Made Putri Tamalare, S.Si.

Baiq Yulia

Chomsa Asih Lestari

Baiq Repika Nurul Furqon

Nabila Hasan, S.Pd.

Siti Rosidah, S.Si (Biologi, laboran)





# C32 Turnitin L. R. Telly Savalas

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Publication

**2** wrap.warwick.ac.uk **2%**  
Internet Source

Exclude quotes  On  
Exclude bibliography  On

Exclude matches  Off