

C38 Turnitin L. R. Telly Savalas

by Lalu Rudyat Telly Savalas C38

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6th ICICS
South Sumatera
2017

The 6th
International
Conference of the
Indonesian
Chemical Society
2017

PROGRAMME AND ABSTRACTS BOOK

Palembang, Indonesia October 15 - 20, 2017
<http://icics.kimiawan.org>

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The 6th International Conference of the Indonesian Chemical Society 2017

Hotel Horizon Utama, Palembang, Indonesia

October 15 - 20, 2017

The 6th Himpunan Kimia Indonesia (HKI) annual conference on Tue-Wed, 17-18 October 2017, is organized by South Sumatera Branch of HKI in collaboration with Sriwijaya University (Unsri) and South Sumatera Province. South Sumatera was selected as the location for 2017 HKI annual conference in HKI National Meeting 2014, 3 years ago, in Ambon, Maluku. This is a bilingual conference (Indonesian and English), which means that the paper can be written in English or Indonesian language (Bahasa Indonesia), and the presentation can be delivered in English or Bahasa Indonesia.

Before, parallel to, or after the conference, there will be several satellite activities (workshop, etc.) including a meeting of the Forum of Head of Chemistry Departments in Indonesia (Temu Forum Ketua Jurusan/Prodi Kimia dan Pendidikan Kimia se-Indonesia 2017, Temu FKJKI-2017), contact: fkjkj-2017@kimiawan.org that will be started in the evening (19.00) of 17 October 2017. Any chemistry-related communities/institutions could register other satellite activities (one-day workshop, symposium, training, etc.) to icics-2017-satellite@kimiawan.org, to be offered to conference attendees. Satellite activities could be held in any date between 3 October to 31 October 2017.

One day before the conference, on Monday, 16 October 2017, HKI Congress will be held to find the next President-Elect of HKI. The elected person will be the next President-Elect of the Indonesian Chemical Society from 1 January 2018 to 31 December 2018, while Dr. Tatas Brotosudarmo will be the President of HKI.

Speech by Chairman

Assalamualaikum waromatulldhi wabarokatuh,

Dear Distinguished Guests and Participant,

We cordially welcome you to the 6th International Conference of Indonesian Chemical Society in Palembang South Sumatera. This conference is organized by the Indonesian Chemical Society (HKI) and Chemistry Department Faculty of Mathematics and Natural Sciences Sriwijaya University (Unsri) supported by LPPM Unsri.

I would like to inform some formal information related to this conference. The conference's theme is "Stimulating of Advanced Perspective and Current Concepts on Chemistry field". The goals of conference are to provide a vehicle the state of the art in research results and trends in chemistry field, to offer interaction, discussion and possible collaboration among chemist and the public about chemistry, to increase awareness of policy makers and public on chemistry's rule in national development.

This conference consists of 4 keynotes speakers from USA, Japan, Solomon Island, 8 invited speakers, and 229 participants who deliver as oral or poster presenters. Accompanying this conference, there are some activities: Indonesia high level meeting on chemical security by Sandia USA (15-16 October), Congress of PNHKI (16-17 October), FKJKI meeting (18 October), and Palembang city tour (19 October).

We are sincerely grateful to welcome honorable keynote speakers, distinguished invited speakers and excellent of participants for sharing their knowledge in this conference.

The keynote speakers in this conference are :

1. Dr. Andrew W. Nielson (Sandia National Laboratories, USA)
2. Prof. Hisao Yoshida (Kyoto University, Japan)
3. Prof. Dr. Basil Shelton Marasinghe (Solomon Island National University, PNG)
4. Drs. Muhammad Abdulkadir Martoprawiro, Ph.D (ITB, Indonesia)

The Invited Speakers are :

1. Prof. Dr. Subandi (UM, Indonesia)
2. Prof. Dr. Suyanta (UNY, Indonesia)
3. Prof. Aldes Lesbani, PhD (Unsri, Indonesia)
4. Dr. Jarnuzi Gunlazuardi (UI, Indonesia)
5. Dr.rer.nat. Didin Mujahidin (ITB, Indonesia)
6. Dr. Muktiningsih Nurjayadi (UNJ, Indonesia)
7. Dr. Sal Prima Yudha S. (Unib, Indonesia)
8. Prof. Dr. Muhammad Bachri Amran (ITB, Indonesia)
9. Dr.rer.nat. Ria Armunanto (UGM, Indonesia)

I would like also to express thanks and appreciation to the organizing committee for their cooperative work and efforts to make our conference a success.

Finally, I would like to thank to all participants and their respective institutions that have made this conference possible and I wish you all have a pleasant meeting.

Walaikumsalam warohmatullahi wabarakaatuh

Hermansyah, M.Sc., Ph.D.

Chairman of Organizing Committee

The 6th International Conference of Indonesian Chemical Society

Forward by the Dean

In the Name of Allah, the Most Beneficent, the Most Merciful.

It gives me a great pleasure to welcome you to the 6th International Conferences of Indonesian Chemical Society (IIC) 2017 organized by the Department of Chemistry Faculty of Mathematics and Natural Sciences University of Sriwijaya in collaboration with the Indonesian Chemical Society. The theme for this conference is “*Stimulating of Advanced Perspective and Current Concepts on Chemistry Field*”.

I am very happy and grateful that many distinguished Academicians, Scientist, Researchers and practitioners of Chemistry have come from both home and abroad to share their knowledge and experience. On behalf of the Faculty of Mathematics and Natural Sciences University of Sriwijaya, I would like to take this opportunity to express our deep appreciation for all of national and international keynote speakers as well as invited speakers for their willingness to come to Palembang and honoring us a keynote speeches for this conference. I also wish to give special thanks to the Sandia America that has hold a special workshop on the “*Indonesia high level meeting on chemical security*” for the last two days. Last but not least, I would like to extend our appreciation to the Indonesian Chemical Society, government, university colleagues and companies for their continued and invaluable support to make this meeting a success.

I sincerely wish you would have most productive days of interesting and stimulating discussions. I believe that this conference is a great opportunity not only for sharing knowledge and experience in chemical research, but also for starting a long and fruitful cooperation and friendship among Academicians, Researchers and practitioners of Chemistry.

Finally, I would like to thank and congratulate the organizing committee for their dedication and tremendous efforts in organizing the conference. I wish you all an enjoyable meeting and fruitful discussion.

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Prof. Dr. Iskhag Iskandar, M.Sc.

Dean, Faculty of Mathematics and Natural Sciences
University of Sriwijaya

Speech by Rector of Sriwijaya University

*Bismillahirrahmanirrahim
Assalamualaikum warahmatullahi wabarakatuh,*

In the name of Allah SWT and all praise belongs to Him who is blessing us today to come and attend this important conference.

In accordance with the university status as a research university, it is important for the university to disseminate new research findings and discoveries in the community, the nation and the world. I am pleased that [Chemistry Department Faculty of Mathematics and Natural Sciences Sriwijaya University \(Unsri\)](#) supported by LPPM Unsri collaborate with the Indonesian Chemical Society (HKI) have organized the sixth international conference of Indonesian chemical society (ICICS) in Palembang.

With the theme of this conference, "Stimulating of Advanced Perspective and Current Concepts on Chemistry field". I believed that this conference served as platform for the discussion and dissemination of research findings information on research trends, and latest development in the area of chemistry. It is hoped that this meeting of academicians, researchers, and professionals from universities, government institutions, research institute, and private companies can lead to much bigger things in the future.

Therefore, I sincerely expect this conference generate more cooperation in research and education. Such cooperation can lead to progress in all areas of chemistry for the welfare of mankind.

By this conference also I hope that it facilitates Indonesian chemists to publish their research results in reputable journal/proceeding.

I am sincerely grateful to welcome honorable keynote speakers, distinguished invited speakers and excellent of participants for sharing their knowledge in this conference.

This conference will be able to meet our goals and objectives and provide a rewarding experience to all participants, from local and international. My appreciation also goes to the organizing committee for making this conference a success.

I take this opportunity to thank and to appreciate the Sandia and CRDF United State of America which have hold the workshop on 'Indonesia high level meeting on chemical security' on October 15-16, 2017.

Congratulation also address to Indonesian chemical society and head of chemistry department from Universities in Indonesia for their annual national meeting and congress during this conference.

Finally, in anticipation of successful conference, in the name of Allah, the beneficent, the merciful.

“Bismillahirrohmaanirrohim”

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I hereby officially open the 6th International Conference of Indonesian Chemical Society 2017”

Good luck, I wish you all an enjoyable meeting and fruitful discussion.

Wassalamualaikum Warohmatullohi wabarokatuh.

Prof. Dr. Ir. AnisSagaf, MSCE.

Rector of Sriwijaya University

Paralel Class

Day 2 (Wednesday / 18th October 2017)

Room : Semeru 1
Moderator : Nirwan Syarif

Time	Reg. Number	Name	Title
10.30 – 10.45	OP 90	Rachmat T. Tjahjanto	The Synthesis of graphene from natural graphite using modified Hummer method
10.45 – 11.00	OP 91	Nurchahyo Iman Prakoso	An investigation of insect ovipositing repellent activity of <i>Acacia auriculiformis</i> leaf extracts to <i>Batrocera carambolae</i>
11.00 – 11.15	OP 92	Edi Suryanto	Effect of cosolvent on antioxidant activity of composite flour from banana, corn and sago
11.15 – 11.30	OP 93	Suheryanto	Validation of Methylmercury Determination in Sediments Using GCMS (Gas Chromatography Mass Spectrometry)
11.30 – 11.45	OP 94	Masdania Zurairah Siregar	Characterisation Carbon Nanotube from Rice Husk Activated Carbon as Adsorbent to Reduce Peat Water
11.45 – 12.00	OP 95	Hawwin Thoriquil	Docking and molecular dynamics evaluation of cycloartenol anticancer activity through ERK2 inhibition
LUNCH, SHOLAT DAN REST			
13.00 – 13.15	OP 96	Manihar Stumorang	Antimalarial activity of extract and fraction of Temu mangga (Curcuma mangga) rhizomes
13.15 – 13.30	OP 97	Ahmad Hanapi	Claisen-Schmidt Condensation from vanillin and acetone using Grinding Technique
13.30 – 13.45	OP 98	Septianty Magdalena Simanjuntak	Study adsorption ion Lanthanum and Erbium using pectin from banana peel
13.45 – 14.00	OP 99	Rurini Retnowati,	The Influence of Distillation Time on Component Profile of Essential Oil of Key Lime (<i>Citrus aurantifolia</i> (Christm.&Panz.) Swingle) Leaves and Its Antibacterial Activity Against <i>Staphylococcus Aureus</i>
14.00 – 14.15	OP 100	Evi Manyani	The Anti-Fungal Effect of Candida Albican Cause "Candidiasis" in Various of liquid substances with ZnO Nanoparticles and TiO ₂ Combination as Active

		Ingredients	
14.15 – 14.30	OP 101	Lalu Rudyat Telly Savalas	eicosenoic Acids Derivatives as Novel Inhibitors for Mycobacterium Tuberculosis Protein Tyrosine Phosphatase B
14.30 – 14.45	OP 102	Tia Okseini	12 Total Phenolic content, Total Flavonoid content and Antioxidant Activity of the root, Stem Bark and Leaves <i>Elaeocarpus mastersii</i> King.
14.45 – 15.00	OP 103	Widiantari Nofriandani	Study Interaction of Catechin extract (Camellia Sinensis) with Tantalum and Niobium Gradual Leaching Product of tin Slags II
15.00 – 15.15	OP 104	Hartati	Mesoporous Hierarchically Amorphous Aluminosilicates Pore Diameter Increment by Multi- Stage Hydrothermal
15.30	COFFEE BREAK		
16.00	CLOSING CEREMONY		

Room : Semeru 2
Moderator : Eliza

Time	Reg. Number	Name	Title
10.30 – 10.45	OP 106	Dilia Puspa	10 Fatty Acids from Microalgae <i>Botryococcus Braunii</i> for Raw Material of Biodiesel
10.45 – 11.00	OP 107	Sri Mulyani	In vitro Analysis of PcpB Protein Function in <i>Pentachloropseudoin biosynthesis</i> from <i>Actinoplanes</i> Sp.
11.00 – 11.15	OP 108	Sofijan Hadi	Increasing the production of the extracellular thermophilic β -xylosidase by recombinan <i>Bacillus megaterium</i> MS941
11.15-11.30	OP 109	Teguh Endah Saraswati	Surface modification of TiO2-carbon photocatalyst nanocomposite Prepared by submerged Arc discharge in different Liquid Medium
11.30-11.45	OP 110	Muhammad Arba	QSAR,Molecular Docking and Dynamics studies of Benzamide Derivatives as Allosteric Inhibitor or Mitogen Enhanced Kinase
11.45 – 12.00	OP 111	Ronaldo Irzon	Rare Earth Elements Identification on Granitoid from unggan,Sijunjung, West Sumatera
12.00	LUNCH, SHOLAT, AND REST		

reported that combination between **21** and monoketone curcumins showed synergistic activity against α -glucosidase enzyme. Combination FA and (Z,E,5E)-2,5-bis(4-hydroxy-3-methoxy)benzylidene)cyclopentanone (AC1) showed highest inhibition activity at the 2:1 mole ratio of FA to AC1. 2:1 while combination FA to (Z,E,6E)-2,6-bis(3,4-dimethoxy)benzylidene)cyclohexanone (AC2) showed the highest inhibition at ratio FA to AC2 1: 3. We could not concluded yet which substances gave stronger role to synergism.

Keywords: Monoketone curcumin; ferulic acid; antidiabetic; α -Glucosidase; synergism

1-231- Eicosenoic Acids Derivatives as Novel Inhibitors for Mycobacterium tuberculosis Protein tyrosine phosphatase B

Lalu Rudyat Telly Savalas*

Department of Chemistry, University of Mataram

*email: rudyat_telly@yahoo.co.id

2 Mycobacterium tuberculosis Protein tyrosine phosphatase B or PtpB is an attractive target for latent M. tuberculosis prevention. Secretion of PtpB by M. tuberculosis upon engulfment of this bacterium by phagosome leads to latent M. tuberculosis state by inhibiting the fusion between bacteria-containing phagosome with lysosome. The fusion will otherwise kill the bacteria since acidic environment of lysosome and tenth of it hydrolytic enzymes are capable of degrading invading bacteria. Although the exact mechanism by which PtpB inhibits phagosome-lysosome fusion is not well understood, the possibility to inhibit PtpB might be a strategy to prevent latent M. tuberculosis infection. In this study, novel of PtpB inhibitors of eicosenoic acids derivatives are described. At low **2** micromolar concentrations, cis-11-eicosenoic acid, trans-2-eicosenoic acid and cis-2-eicosenoic acid can inhibit PtpB activity by 75.23%, 73.57% and 62.06%, respectively. This result suggests potential application of eicosenoic acid derivatives as inhibitor of PtpB in an attempt to prevent latent M. tuberculosis infection.

Keywords: Protein tyrosine phosphatase B; eicosenoic acid derivatives; latent M. tuberculosis infection

1233- Ni-Catalyzed Isomerization of Phenylpropenoids and Hydrogenation of Furfural

Yessi Permana*

Inorganic and Physical Chemistry Research Division, Institut Teknologi Bandung

*email: yessi@chem.itb.ac.id

Stereoselective isomerizations of phenylpropenoids (i.e., eugenol, methyl eugenol, estragole, and allyl phenol) to trans-isomerized products in a neat condition were successfully catalyzed by **6** in situ generated Ni(0)phosphine. The complex was prepared in situ from a simple Ni(II) salt, phosphine, Zn powder, and a nitrile with Ni/phosphine/Zn/nitrile mol ratio as low as 1:2:1:1. The catalytic system employed Ni(II) complex as low as 0.167 mol%. The trans-product was generated in high yield when nitrile as low as 1 mol eq. to the Ni complex (5 μ l) was added prior to the reaction, indicating a possible formation of Ni(0)nitriphosphine complex as an active catalyst. Elucidations of a nitrile role in such isomerizations were elaborated using eugenol and methyl eugenol substrates. High phenylpropenoids conversions (>99%) and high selectivity to trans-products (95%) were observed within an hour. The isomerization of eugenol was in fact completed in 30 min at room temperature to give trans-iso-eugenol (>97%), with Ni turn over frequency (TOF) up to 1,116 h⁻¹. The complex was also evaluated in catalytic transfer hydrogenation of furfural to selectively generate 6-furyl alcohol in the absence of hydrogen pressure. It was observed that the in situ generated Ni(0) phosphine gave only 21% of the product when it was employed in the reaction for 5 h at 80 °C in ethanol solution. However, higher yield was achieved by a sponge-like Ni(0), generated from dealuminated Ni-Al alloy. This Ni(0) gave furfuryl alcohol yield > 60% when employed in the reaction at 150 °C for 4 h in the presence of formic acid and ethanol as a hydrogen source.

Keywords: Isomerizations; Hydrogenation; Nickel(II) phosphine; Phenylpropenoids; Furfural

Certificate Of Participant

This is to Certify That

Lalu Rudyat Telly Savalas

Has Successfully Completed the

PRESENTER

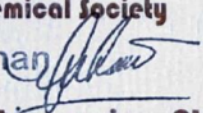
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The 6th International Conference of the Indonesian
Chemical Society.

Palembang, October 17-18, 2017



6th **ICICS**
South Sumatera **2017**

Indonesian Chemical Society
HKI Himpunan Kimia

Muhamad Adhitya Prawiro. Ph.D
President

Faculty of Mathematics and Natural Sciences

Prof. Dr. Iskhag Iskandar M.Sc
Dean

Organizing Committee

Hermanyah. Ph.D
Chairman



2 **EICOSENOIC ACIDS DERIVATIVES AS
NOVEL INHIBITORS FOR MYCOBACTERIUM
TUBERCULOSIS PROTEIN TYROSINE
PHOSPHATASE B**

LALU RUDYAT TELLY SAVALAS.

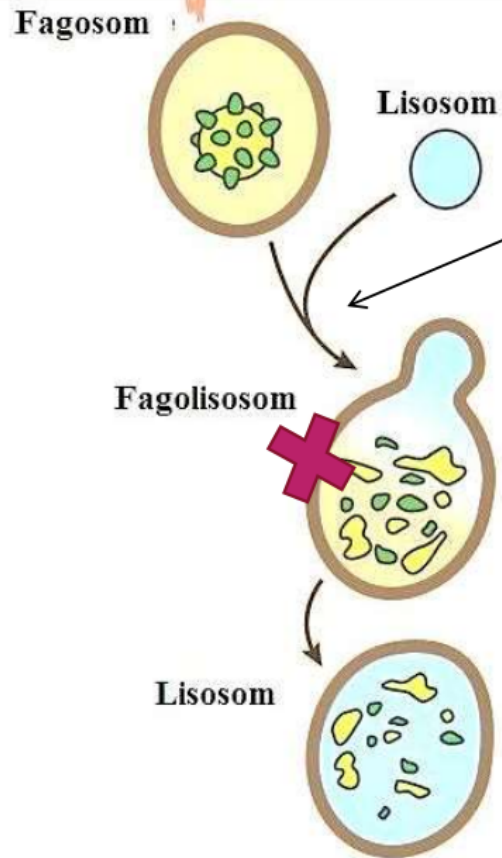
UNIVERSITY OF MATARAM

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THE 6TH INTERNATIONAL CONFERENCE OF THE INDONESIAN CHEMICAL SOCIETY ICICS 2017
PALEMBANG, 15-20 OCTOBER 2017

BACKGROUND

Mycobacterium tuberculosis (*Mtb*) the causative agent of TB



PtpB
PtpA

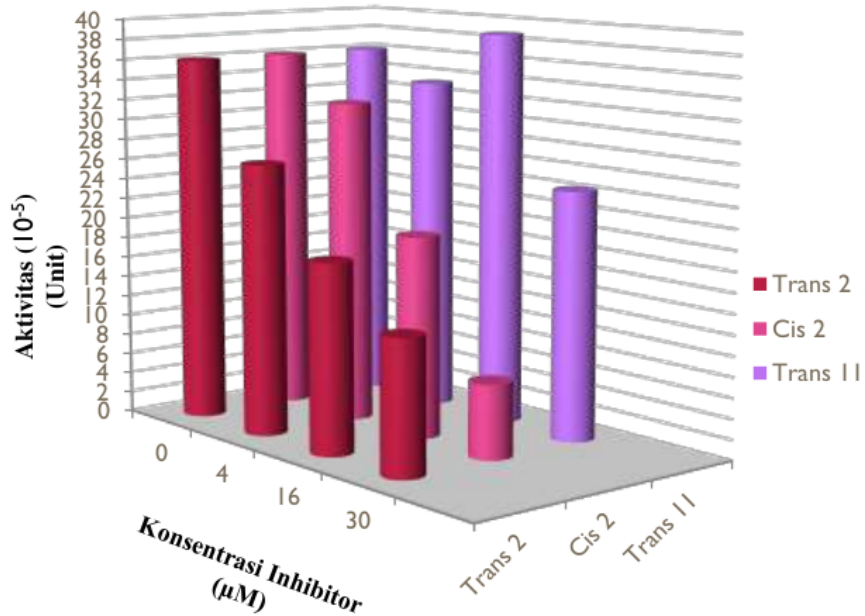


Eicosenoic fatty acids (ESA)

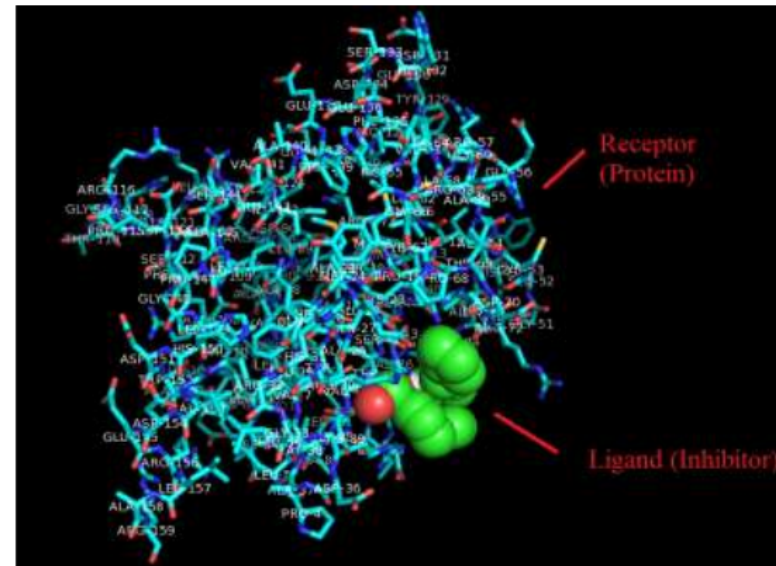
- *trans*-2-ESA
- *cis*-2-ESA
- *trans*-11-ESA
- *cis*-11-ESA

BACKGROUND

- Eicosenoic Fatty Acids were shown to inhibit PtpA



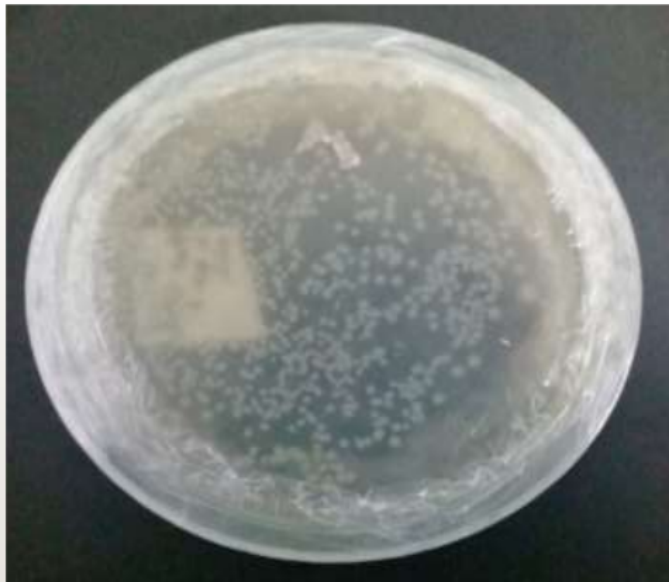
Bioinformatics shows agreement with observation



RESULTS



1. PtpB Expression in *E.coli* BL21 (DE3)



E.coli BL21 (DE3) transformed with pET30b-PtpB



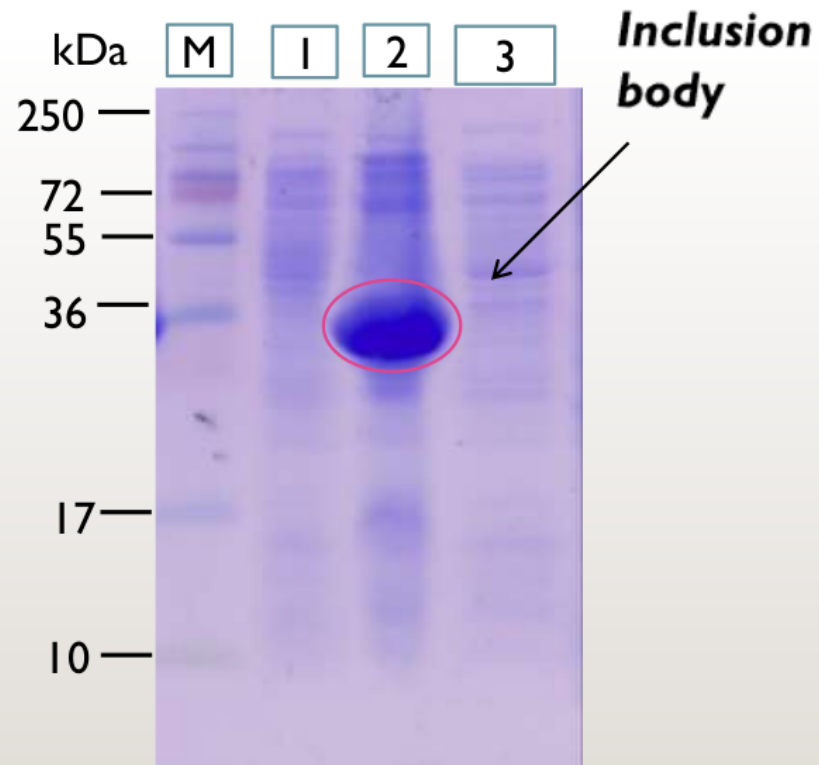
Lysate after sonication

PTPB PRODUCTION

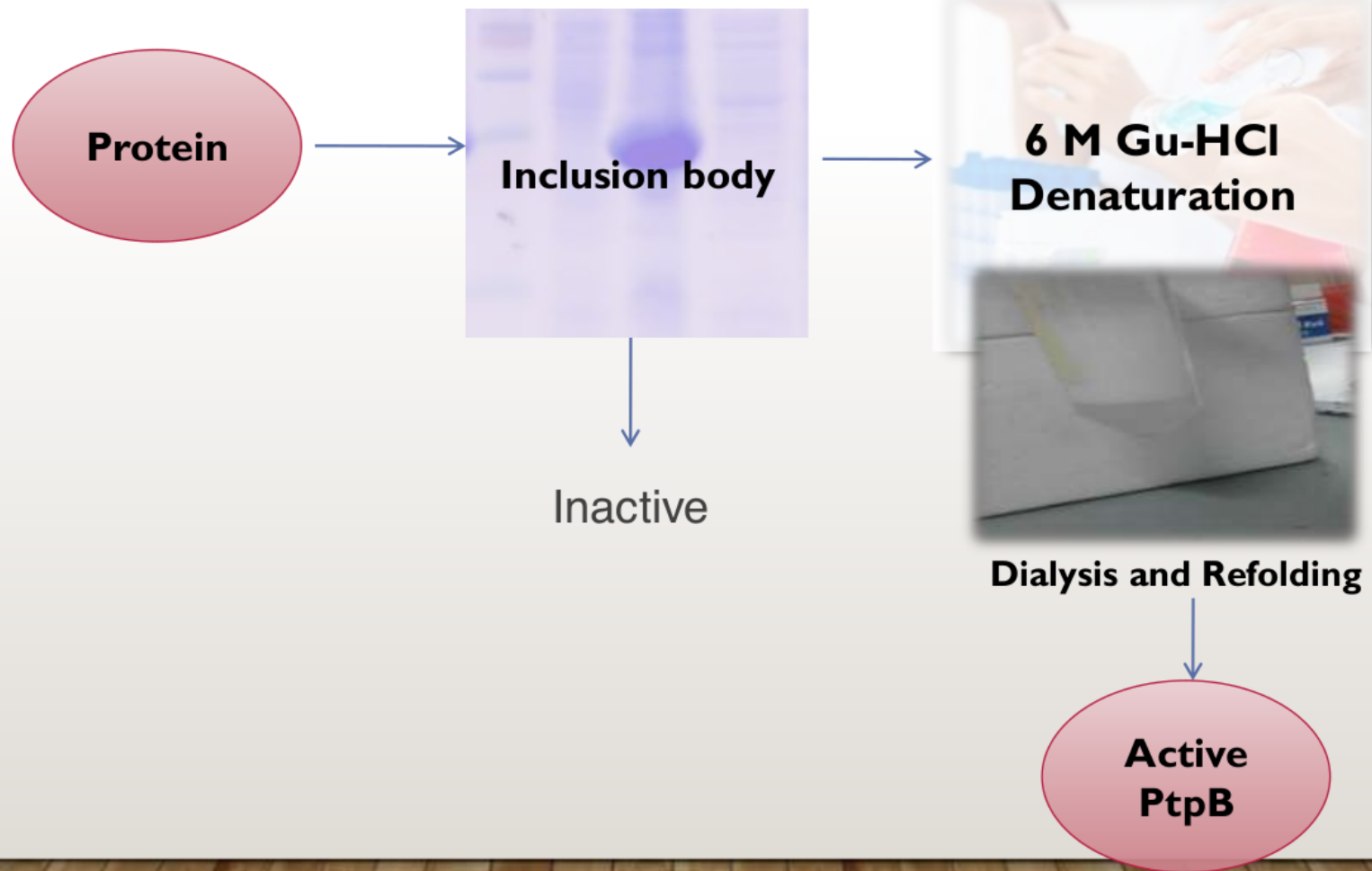


Overexpressed PtpB

Ket.	
M	marker
1	B121 Ø
2	PtpB (pelet)
3	PtpB (supenatan)



PTPB PRODUCTION (CONT'D)

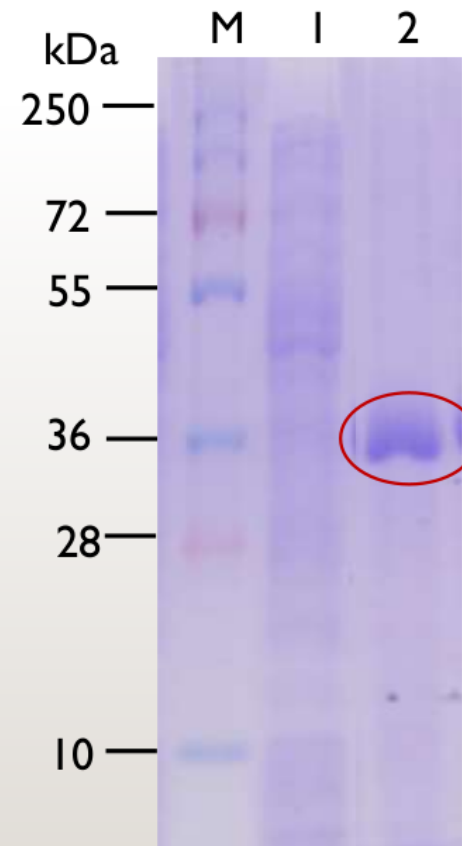


PTPB REFOLDING



SDS-PAGE

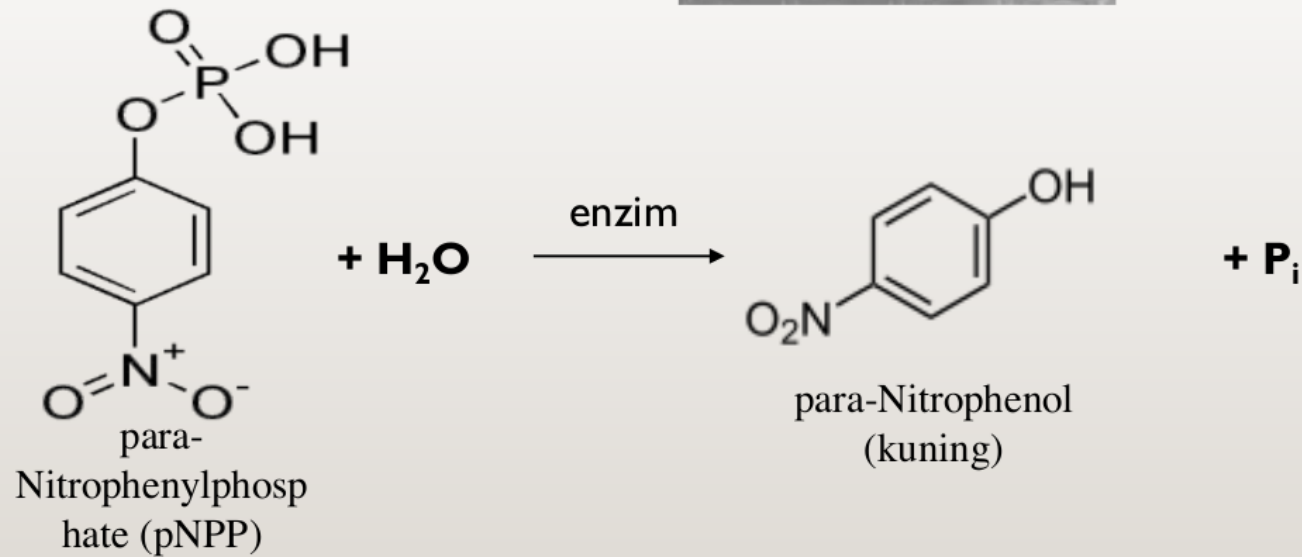
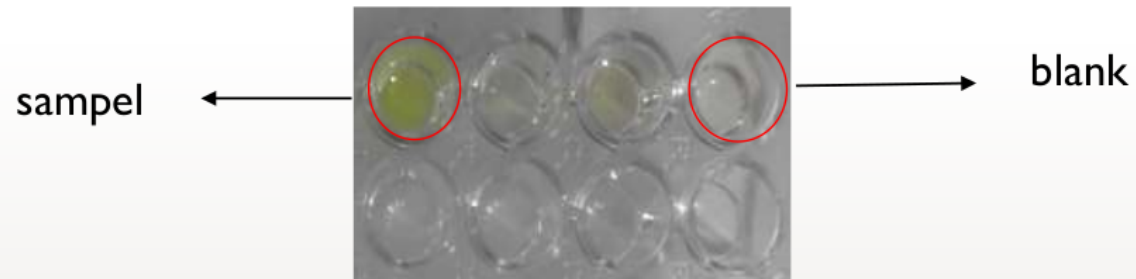
Sample	
M	Marker
1	Empty BL21 Ø (kontrol)
2	Refolded PtpB



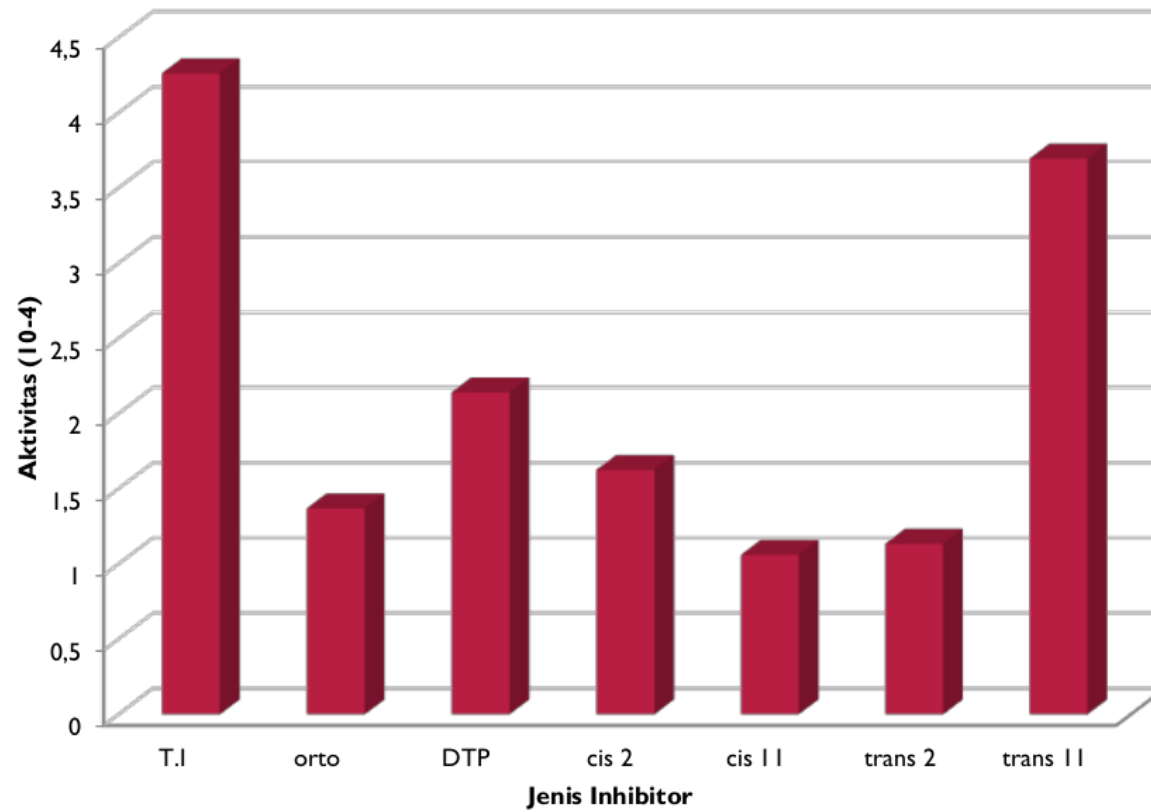
RESULT



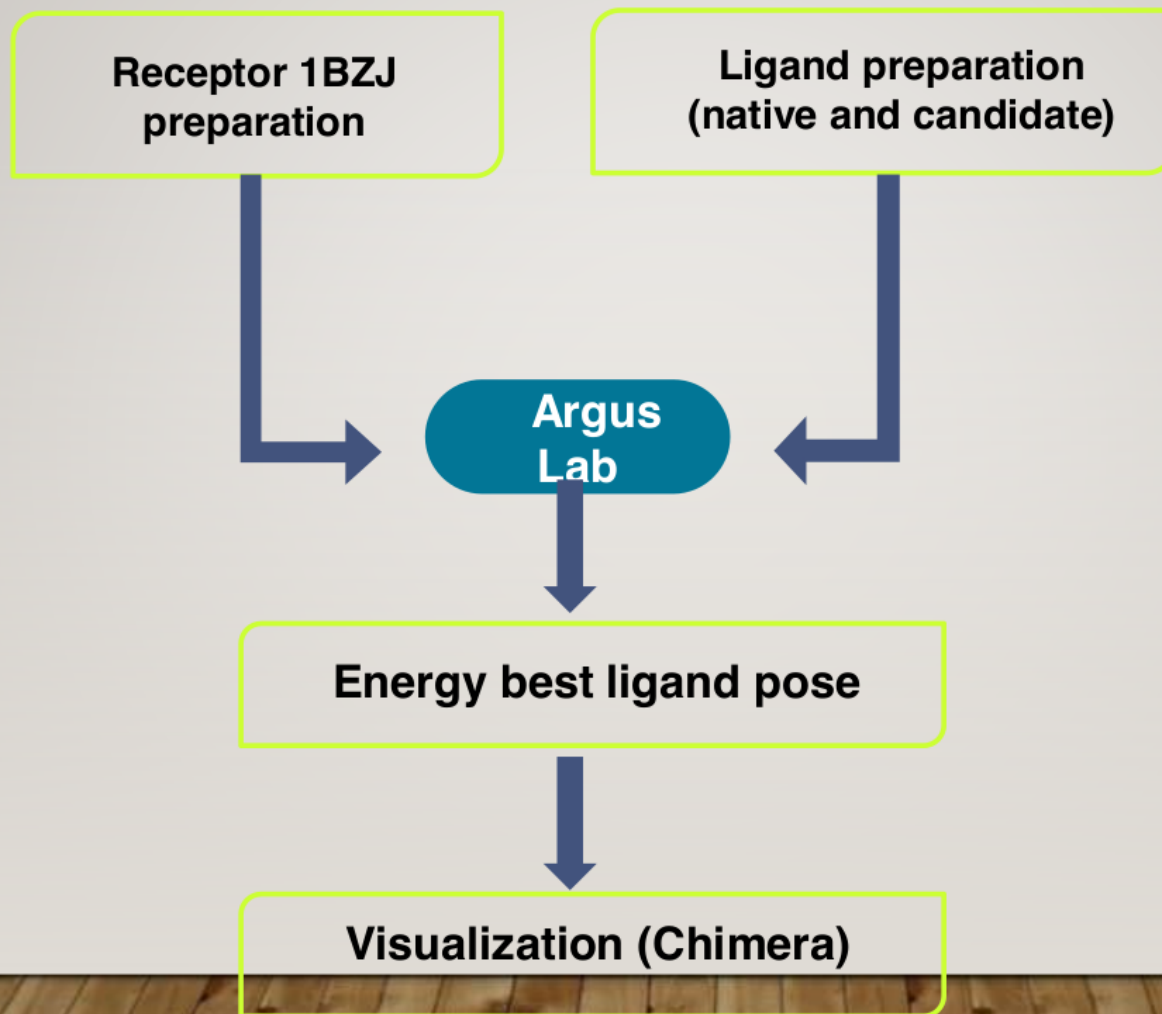
PtpB Activity Test against pNPP



RESULT: PTPB INHIBITION WITH ESA



CONFIRMATION OF INHIBITION BY DOCKING ANALYSIS



DOCKING RESULT

Best ligand pose (candidate)

Cis 2

Best Ligand Pose : energy = -11.5523 kcal/mol
Docking run: elapsed time = 2554 seconds

Cis 11

Best Ligand Pose : energy = -11.4402 kcal/mol
Docking run: elapsed time = 7036 seconds

Trans 11

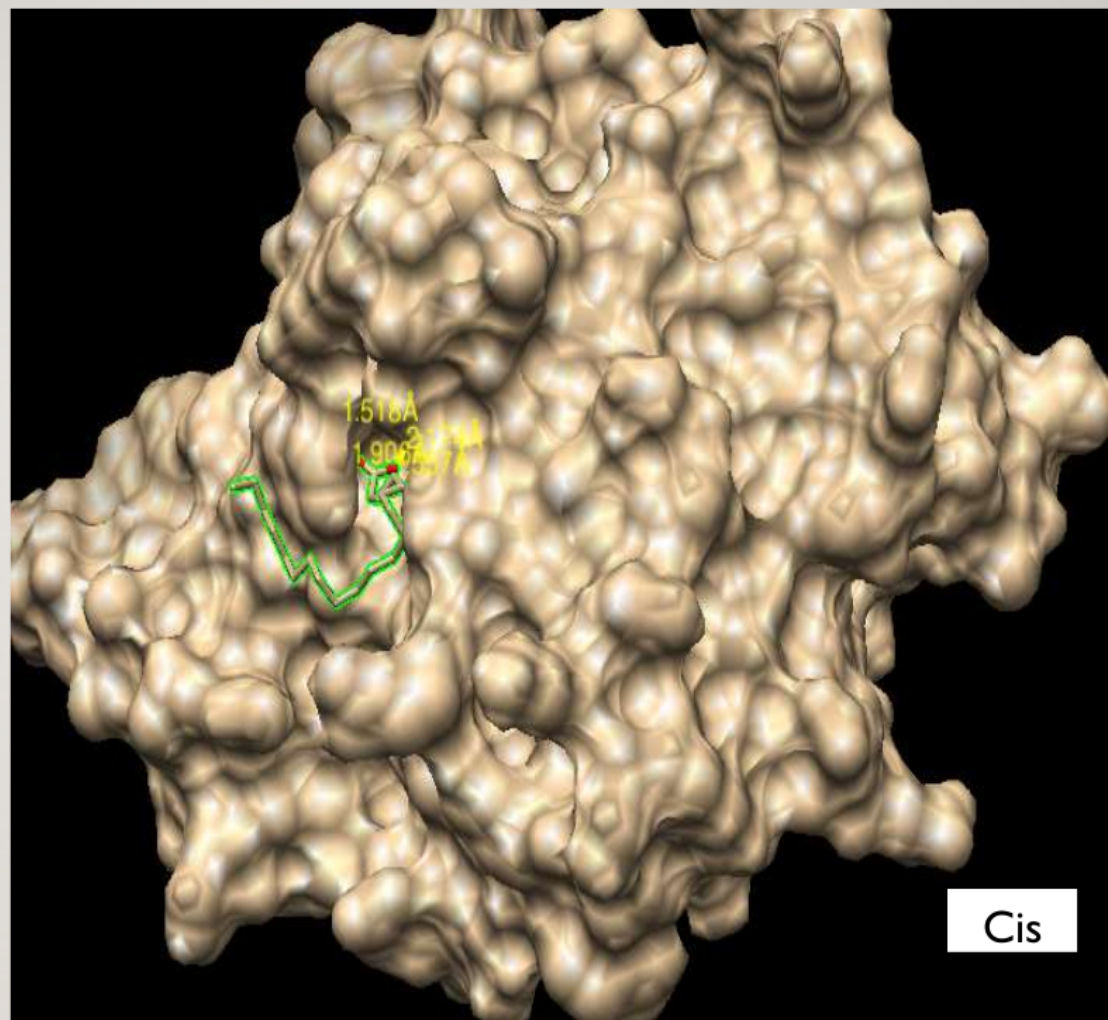
Best Ligand Pose : energy = -11.4402 kcal/mol
Docking run: elapsed time = 7138 seconds

Trans 2

Best Ligand Pose : energy = -11.5523 kcal/mol
Docking run: elapsed time = 2574 seconds

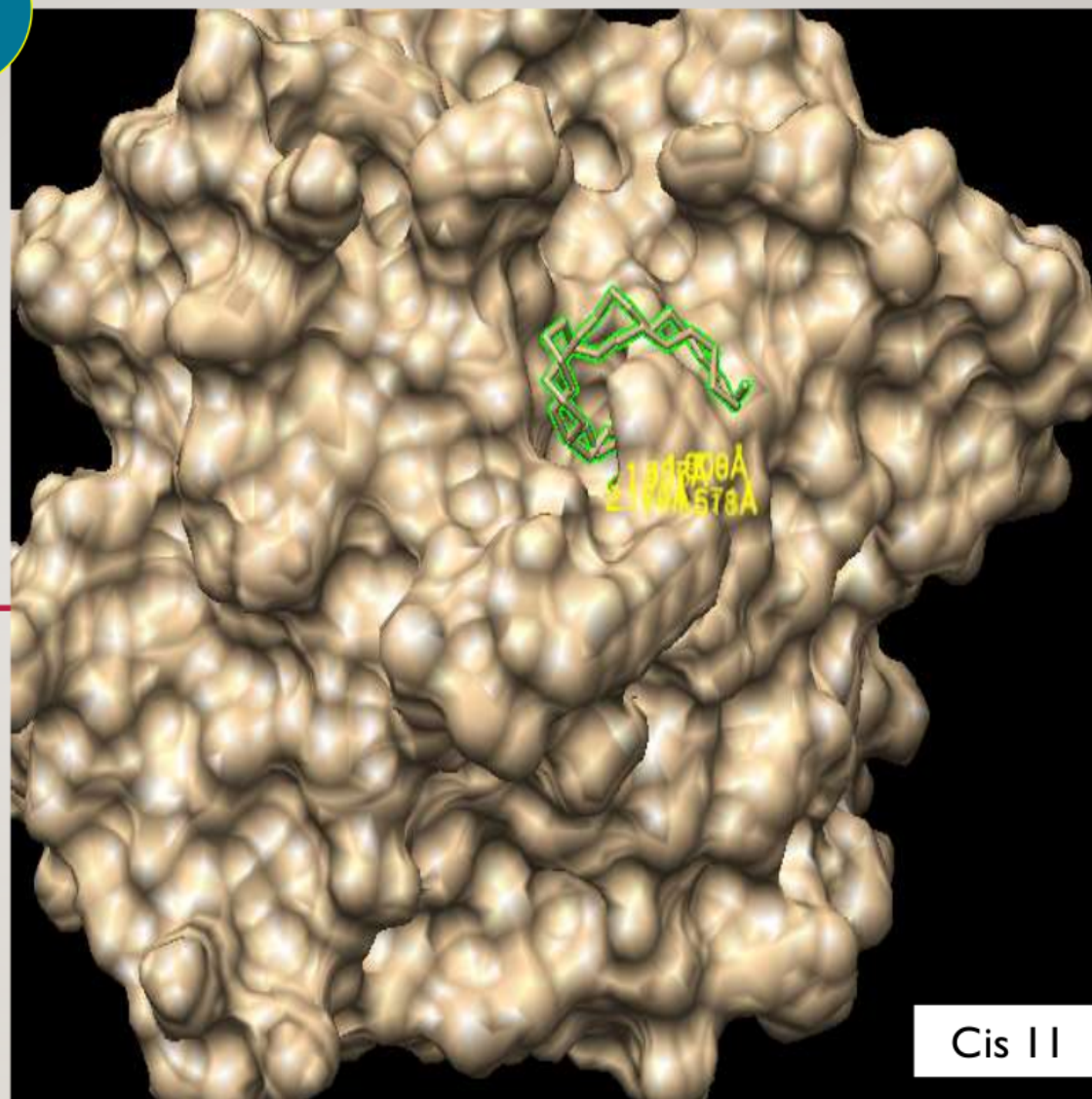
Docking of cis-2-ESA

- Several hydrogen bonds present
- Best Ligand Pose: -11.5523 kcal/mol



Docking of cis-11-ESA

- Several hydrogens bonds present
- Best Ligand Pose: -11,4402 kcal/mol



Cis II

CONCLUSION

- Eicosenoic fatty acids that inhibit PtpA also potentially inhibit Mtb PtpB
- Initial docking result shows inhibition of PtpB with ESA. However, refinement of docking is required.

THANK YOU



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