



## THE GABA B RECEPTOR AGONIST BACLOFEN ATTENUATES NEUROPATHIC PAIN IN MICE

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**Background:** Neuropathic pain is pain arising from dysfunction of the peripheral or central nervous system. It is a chronic pain and a disastrous health problem causing burden to the patient quality of life, productivity and health care cost. The dysfunction of GABA-ergic system (GABA-ergic inhibition) can cause neuropathic pain. Baclofen, a GABA B agonist, acts by restoring inhibitory neurotransmitter, GABA. Baclofen inhibits presynaptic calcium channel and postsynaptic potassium channel and adenylate cyclase enzyme.

**Objective:** To assess the effectiveness of GABA B agonist baclofen in reducing neuropathic pain in mice.

**Method:** 3 – 5 mice per group (total 5 groups) were classified into two major categories i.e. Sham (control) or Ligation. Mice-modelled neuropathic pain was induced using ligation of the sciatic nerve by procedure described by Bennet and Xie. Three groups of mice received intrathecal administration of baclofen of 1, 10 or 30 nmol whereas two groups received only normal saline for 7 consecutive days (at 7 – 14 days post surgical procedure). Hyperalgesia was measured using Hot Plate Test at day 0, 3, 5, 7, 9, 11, and 14. Data were analysed using Two Way Anova.

**Result:** Bennet and Xie procedure successfully developed neuropathic pain in which this was shown by significantly different between Sham and Ligation group ( $F_{(1, 17)} = 3,46$  ;  $p=0,02$ ). All doses of 1, 10 and 30 nmol baclofen resulted in increasing response time to thermal stimulus compared with normal saline ligation group. However, the statistical analysis of all doses showed no significant different and thus 1 nmol baclofen might an optimal dose in reducing neuropathic pain for this experiment. Furthermore, baclofen as GABA B agonist showed partial treatment response in managing neuropathic pain which it is rationale considering baclofen as only GABA-B receptor agonist while there are many mechanisms contributing to the development of neuropathic pain. Therefore, a combination therapy with other agents is essential for managing neuropathic pain.

**Conclusion:** Baclofen is effective for managing neuropathic pain in this mice model. The partial treatment response with baclofen necessitates a combination therapy strategy.

**Keywords:** baclofen, neuropathic pain, mice

**AACP**  
Asian Conference on Clinical Pharmacy



Faculty of Pharmacy Airlangga University

THE  
**8**<sup>th</sup>  
ASIAN  
CONFERENCE  
ON  
CLINICAL  
PHARMACY

Hyatt Regency Surabaya Hotel  
Surabaya, Indonesia  
July 1 - 4, 2008

Toward Harmonisation of Education  
and Practice of Asian Clinical Pharmacy

**Editors**

Arie Sulistyarini | Bambang Subakti Zulkarnain | Junaidi Khotib  
Suharjono | Yunita Nita



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## Welcome Message

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## Welcome Message from the Chairman, The 8<sup>th</sup> ACCP

Distinguished Guests, Ladies, and Gentlemen

Welcome to the 8<sup>th</sup> Asian Conference on Clinical Pharmacy (ACCP) in Indonesia. It is a great honor for us to host the 8<sup>th</sup> ACCP this year. Our theme this year is Toward Harmonization of Education and Practice of Asian Clinical Pharmacist, highlight the importance of harmonization, education, practice and research for clinical pharmacist in hospital and community in Asia.

This meeting is attended by participants from 15 countries (Australia, Canada, China, Indonesia, Japan, Korea, Malaysia, the Philippines, Qatar, Singapore, Thailand, Saudi Arabia, UK, USA, Vietnam). We are much honored to have distinguished speakers from Asia, Australia, the US and the UK with us this year. The meeting is consisted of plenary talk, country representative presentation, oral and poster presentation and also interactive session. There are also board meeting, exhibition, farewell dinner, hospital and university visit, city tour and post-conference tour to Bali.

The organizing committee would like to thank Rector of Airlangga University, Dean of Faculty of Pharmacy Airlangga University, Director General of Pharmaceutical Services and Medical Devices, Steering Committee and Organizing Committee and to all sponsors who support this conference. Without an excellent cooperation and supports of all those we mention above, this conference would not have been successful. Also, I would like to express my sincere gratitude to all country representatives for their excellent support and advices in the preparation of the meeting. We also owe special thanks to our colleagues from the USA, Canada, Australia and UK for their valuable contribution.

I hope that all delegates will greatly benefit from this meeting. I truly wish that this meeting will be a successful one and become one of the memorable moments in your life and hope that you will enjoy the beauty of Indonesia and enjoy our hospitality.

Best regards,

**Dr. Suharjono, MS, Apt**  
**Chairman of the 8<sup>th</sup> ACCP**



## Welcome Message from the President of ACCP

Dear colleagues

I'd like to extend a warm-hearted welcome to you all gathered here to participate in the 8<sup>th</sup> Asian Conference on Clinical Pharmacy (the 8<sup>th</sup> ACCP)

On behalf of the ACCP committee, I would like to thank all of you for being here but particularly recognize the time and effort that the members of the ACCP have expend in order to presented their various organization and be with us today to cover a number of subjects that will have an impact on education, pharmacy practice and the health care system for the development of clinical pharmacy in Asian area. Asian countries have made remarkable development on clinical pharmacy. However, we have to work harder to contribute to the newly evolving clinical pharmacist role for future's pharmacist role in clinical services.

For the successful congress during the next four days, the ACCP Committee did our best to build a sophisticated scientific program, as well as to provide everyone of you the best schedules

We hope this important congress will be a fruitful and enjoyable occasion for all participants learning and sharing information with respect to scientific accomplishments and the frontiers of on-going worldwide clinical services in the field of clinical pharmacy.

In addition, I would like to express my sincere thanks to the organizing Committee for their effort.

Finally, I cannot not stop telling you about the contributions of our colleagues from the USA, Canada and Australia. Without their transfusions, this congress could not be possible.

Again, welcome to the congress and hope to see you at the 9<sup>th</sup> ACCP in Seoul Korea.

Sincerely yours,

**Wan Gyoon Shin, Pharm.D., Ph.D**  
**Elected President, Asian Conference on Clinical Pharmacy**



## Welcome Message from Director General of Pharmaceutical Services and Medical Devices

It is indeed a great pleasure for me to address a message to welcome the coming 8<sup>th</sup> Asian Conference on Clinical Pharmacy (ACCP) which will be held on 1-4 July 2008 in Surabaya, Indonesia. I would like, at the very outset, to express our appreciation to The Faculty of Pharmacy, University of Airlangga, the Indonesian Pharmacist Association, The Indonesian Association of Hospital Pharmacy and The Indonesian Association of Community Pharmacy that has been selected by all members of ACCP as the host of this important conference.

I am most pleased that the theme of the conference is "Toward Harmonization of Education and Practice of Asian Clinical Pharmacy".

In the globalization era, we are facing now, the theme that has been chosen is very appropriate, where almost no entry barrier of trade for goods, as well as, for services including health care services, in particular pharmaceutical care services. Therefore, Clinical Pharmacy Practice is one of the important aspects for achieving a good health care services for all people.

I do hope that this event would bring a fruitful discussion on sharing the best practice, expertise, experience, and role on clinical pharmacy services. The cooperation and relationship that have been made among pharmacists in Asia region would be beneficial to formulate a dynamic clinical pharmacy in Asia. This event would be a valuable forum on our struggle to reach patient-centered and population-based care that optimizes medication therapy; to manage health system resources to improve therapeutic outcomes; and to improve the life quality of the patient.

**Dra. Kustantinah, Apt., M.App.Sc.**  
**Director General of Pharmaceutical Services and Medical Devices**





## The 8<sup>th</sup> ACCP Organizing Committee

### **Advisory Board**

: Director General of Pharmaceutical Services and Medical Devices Republic of Indonesia  
Director General of Medical Care Republic of Indonesia  
Head of Indonesian National Agency of Drug and Food Control  
Rector of Airlangga University  
Head of the Provincial Health Office of East Java  
Director of Dr. Soetomo General Hospital  
Dean of Faculty of Pharmacy Airlangga University  
Chairman of the Indonesian Pharmacist Association  
Chairman of the Indonesian Association of Hospital Pharmacy

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Asst.Prof. Sutthiporn Pattharachayakul (Thailand)  
A/Prof.Dr. Charles D Sands (USA)  
A/Prof.Dr. Michael Hogue (USA)  
Prof.Dr. Alan Lau (USA)



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**The 8<sup>th</sup> ACCP Organizing Committee**

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## Welcome Message from Rector of Airlangga University

Assalamu alaikum warahmatullahi wabarakatuh

It is indeed my honor to have the opportunity to be with all participants of the 8<sup>th</sup> ACCP conference today.

As pharmaceutical care has been the main issue in our today's world, this conference provides a great opportunity for clinical pharmacists to build better communications. Such effort becomes one of the best ways to share experiences among participants from various countries on specific issues which could enhance the future performance of clinical pharmacists.

More importantly, through a better communication, an increasing awareness on the important role of clinical pharmacists that provides patient care which optimizes medication therapy and promotes health, wellness and disease prevention will soon be achieved. Through such achievements, we have been started showing our contribution to the development of a healthy society, which later can bring us to reach our vision in building a healthy world in the coming years.

I would also like to express my sincere hope, that through this conference, a better collaboration among clinical pharmacists from Asian countries must be created to open an opportunity for conducting researches which will contribute to the generation of new knowledge that advances human health and quality of life. This is a prerequisite toward harmonization of education and practice of Asian Clinical Pharmacy.

In this special event, allow me to acknowledge all participants of the conference, that Airlangga University is greatly honored to be chosen as the host of this important gathering in Asian Pharmacy Circle. May I take this opportunity to thank all of you for coming to the 8<sup>th</sup> ACCP and hope that this is a fruitful and enjoyable experience and that you will join us again for future ACCP events.

I thank the organizing committee for a wonderful work that make the conference a success.

Lastly, I wish all participants to have a good time and enjoy staying in Surabaya.

Wassalamualaikum warahmatullahi wabarakatuh

With my best wishes,

Prof. Dr. H. Fasich  
Rector