

## CURRICULUM VITAE

**Name:** (ภาษาอังกฤษ) Associate Professor Uraiwan Panich, M.D., Ph.D., FCFPT (Cert.)  
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### **Education:**

<u>Degree</u>	<u>Year</u>	<u>Conferring Institution</u>
● Doctor of Medicine	1996	Faculty of Medicine Ramathibodhi hospital, Mahidol University, Thailand
● Ph.D. (Pharmacology)	2003	King's College, University of London, UK (2000-2004)
● Dip Thai Board in Family Medicine	2004	The College of Family Physicians of Thailand

### **Professional experiences:**

<u>Dates</u>	<u>Position</u>	<u>Department/Institution</u>
● 2012 – present	Associate Professor	
● 2008 – 2012	Assistant Professor	

- 1997 – 2008                      Lecturer                      Department of Pharmacology,  
Faculty of Medicine Siriraj Hospital,  
Mahidol University, Thailand
- Feb 2001                          Ph.D. student                Department of Biochemistry,  
Faculty of Medicine,  
National University of Singapore, Singapore
- Oct 1998                          Ph.D. student                International Antioxidant Research Centre,  
Wolfson Centre for Age Related Diseases, Guy's,  
King's and St Thomas' School of Biomedical  
Sciences,  
University of London, UK
- April 1997                        Physician                      Bangbor Hospital, Samutprakarn, Thailand
- April 1996                        Physician                      Central Hospital, Saraburi, Thailand

### PhD Thesis

2000-2003      Peroxynitrite-mediated Biomolecular Damage: A Re-evaluation of the Effects of Antioxidants, under supervision of Professor Barry Halliwell.

### Research Interests

- Oxidative stress and antioxidants in skin aging and cancer
- Redox pharmacology and natural products

### Administrative Service and Professional Responsibilities:

#### *Student Administration*

- Program director (2009-2017): Doctoral and MSc. programs in Pharmacology (International)
- Active supervision of research PhD / MSc Students
- Thesis advisory committee
- Internal and external PhD / MSc examiner

#### *Department & Faculty Administration*

- Academic committee member
- Graduate committee member

### *Professional Administration*

- Guest Associate Editor, *Frontiers in Pharmacology*
- Reviewer of research articles submitted to the following journals:  
*Experimental Dermatology, Journal of Physiological and Biomedical Sciences, Cellular & Molecular Biology Letters, Archives of Dermatological Research, Biofactors, Phytotherapy Research, BMC complementary and alternative medicine, European Journal of Integrative Medicine, Food and Chemical Toxicology, Inflammation, Phytomedicine, Biochimie, Oncotarget, Gene Therapy, Clinical and Experimental Dermatology, Molecular Therapy – Nucleic acids*
- Reviewer of research proposal
- Reviewer of conference proceedings and poster presentations
- Conference organization: Organizing committee  
The 7th Biennial Meeting of Society for Free Radical Research-Asia (SFRR-Asia 2015), Nov 29-Dec 2, 2015.  
The Graduate Research Forum, Faculty of Medicine Siriraj Hospital, Mahidol University (2015-present)  
The 36<sup>th</sup> Congress of Pharmacological Society of Thailand, Mar 27-28, 2014.

### **International Collaborations:**

- Professor Andrzej Slominski, Department of Dermatology, Comprehensive Cancer Center, Cancer Chemoprevention Program, Nutrition Obesity Research Center University of Alabama at Birmingham, AL, USA.
- Professor Matthew Whiteman, Medical School, University of Exeter, UK.

### **Membership of professional bodies**

- The Society for Free Radical Research International (2008-present)
- PanAmerican Society for pigment cell research and International Federation of Pigment Cell Societies (2010-present)

### **Scientific and Professional Awards**

- Oral presentation award (2<sup>nd</sup> prize) in the 44<sup>th</sup> Siriraj Scientific Congress, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand; 16 Mar, 2004.
- The Travel Award from *PanAmerican Society of Pigment Cell Research (PASPCR)* conference, Vancouver, Canada, Sept 30 - Oct 2, 2010.

- Research Excellence award 2012 by Faculty of Medicine Siriraj Hospital, Mahidol University.
- Supervisor for PhD. student, Miss Saowanee Jeayeng, receiving the 1<sup>st</sup> Consolation Prize of the 3<sup>rd</sup> Merck Young Scientist Award for oral presentation at the Faculty of Science, Mahidol University, October 7, 2013.
- Supervisor for M.Sc. student, Miss Lapatsanan Chaisiriwong, receiving the 1st runner up award for poster presentation at the 36th Congress of Pharmacological Society of Thailand, Mar 27-28, 2014.
- Supervisor for PhD. Student, Miss Saowanee Jeayeng, receiving the 1<sup>st</sup> Consolation Prize for research presentation at the Graduate Research Forum, Siriraj International Conference in Medicine and Public Health, Faculty of Medicine Siriraj Hospital, Mahidol University, Jul 15, 2014.
- Supervisor for PhD. Student, Miss Anyamanee Chaiprasongsuk, receiving the best paper award for research presentation at the Mahidol University Graduate Research Expo 2014 “MU Looks to the Future”, Bangkok, Dec 1, 2014.
- Supervisor for PhD. Student, Miss Anyamanee Chaiprasongsuk, receiving the 1<sup>st</sup> Consolation Prize for research presentation at the Graduate Research Forum, Faculty of Medicine Siriraj Hospital, Mahidol University, Jun 10, 2015.
- Supervisor for PhD. Student, Miss Saowanee Jeayeng, receiving the Young Investigator Award (Poster Presentation) From Oxygen Club of California at Society of Free Radical Research-Asia 2015, Chiang Mai, Nov 29, 2015.
- Distinguished Alumni Award (for academic achievement) 2017 from Faculty of Medicine Ramathibodhi hospital, Mahidol University.

## Research Publications:

### *International Publications*

1. Jeayeng S, Wongkajornsilp A, Slominski AT, Jirawatnotai S, Sampattavanich S, **Panich U**. Nrf2 in keratinocytes modulates UVB-induced DNA damage and apoptosis in melanocytes through MAPK signaling. *Free Radic Biol Med* 2017;108:918-928.
2. Chaiprasongsuk A, Lohakul J, Soontrapa K, Sampattavanich S, Akarasereenont P, **Panich U**. Activation of Nrf2 reduces UVA-mediated MMP-1 upregulation via MAPK/AP-1 signaling cascades: the photoprotective effects of sulforaphane and hispidulin. *J Pharmacol Exp Ther* 2017;360:388-398. DOI: <https://doi.org/10.1124/jpet.116.238048>.

3. Thamsermsang O, Akarasereenont P, Laohapand T, **Panich U**. IL-1 $\beta$ -induced modulation of gene expression profile in human dermal fibroblasts: the effects of Thai herbal Sahatsatara formula, piperine and gallic acid possessing antioxidant properties. *BMC Complement Altern Med* 2017;17:32. DOI: 10.1186/s12906-016-1515-0.
4. **Panich U**, Sittithumcharee G, Rathviboon N, Jirawatnotai S .Ultraviolet radiation-induced skin aging :The role of DNA damage and oxidative stress in epidermal stem cell damage mediated skin aging .*Stem Cells Int* 2016;2016: Article ID 7370642.
5. Chairprasongsuk A, Onkoksoong T, Pluemsamran T, Limsaengurai S, **Panich U**. Photoprotection by dietary phenolics against melanogenesis induced by UVA through Nrf2-dependent antioxidant responses. *Redox Biol* 2016;8:79-90.
6. Chaisiriwong L, Wanitphakdeedecha R, Sitthinamsuwan P, Sampattavanich S, Chatsiricharoenkul S, Manuskiatti W, **Panich U**. A case-control study of involvement of oxidative DNA damage and alteration of antioxidant defense system in patients with basal cell carcinoma: modulation by tumor removal. *Oxid Cell Longev Med* 2016;2016:5934024.
7. Thangboonjit W, Limsaengurai S, Pluemsamran T, **Panich U**. Comparative evaluation of antityrosinase and antioxidant activities of dietary phenolics and their activities in melanoma cells exposed to UVA. *Siriraj Med J* 2014;66:5-10.
8. Pluemsamran T, Tripatara P, Phadungrakwittaya R, Akarasereenont P, Laohapand T, **Panich U**. Redox mechanisms of AVS022, an oriental polyherbal formula, and its component herbs in protection against induction of matrix metalloproteinase-1 in UVA-irradiated keratinocyte HaCaT cells. *Evid Based Complement Alternat Med*. 2013;2013:739473-739482.
9. **Panich U**, Pluemsamran T, Tangsupa-a-nan V, Wattanarangsana J, Phadungrakwittaya R, Akarasereenont P, Laohapand T. Protective effect of AVS073, a polyherbal formula, against UVA-induced melanogenesis through a redox mechanism involving glutathione-related antioxidant defense. *BMC Complement Altern Med* 2013;13:159-168.
10. Pluemsamran T, Onkoksoong T, **Panich U**. Caffeic acid and ferulic acid inhibit UVA-induced matrix metalloproteinase-1 through regulation of antioxidant defense system in keratinocyte HaCaT cells. *Photochem Photobiol* 2012; 88: 961-968.
11. **Panich U**, Onkoksoong T, Limsaengurai S, Akarasereenont P, Wongkajornsilp A. UVA-induced melanogenesis and modulation of glutathione redox system in different melanoma cell lines: the protective effect of gallic acid. *J Photochem Photobiol B* 2012; 108: 16-22.
12. Huabprasert S, Kasetinsombat K, Kangsadalampai K, Wongkajornsilp A, Akarasereenont P, **Panich U**, Laohapand T. The *Phyllanthus emblica* L. infusion carries immunostimulatory activity in a mouse model. *J Med Assoc Thai* 2012;95:75-82.

13. **Panich U**, Tangsupa-a-nan V, Onkoksoong T, Kongtaphan K, Kasetsinsombat K, Akarasereenont P, Wongkajornsilp A. Ascorbic acid inhibits UVA-mediated melanogenesis by modulating antioxidant defense and nitric oxide system. *Arch Pharm Res* 2011; 34: 811-820.
14. **Panich U**, Kongtaphan K, Onkoksoong T, Jaemsak K, Phadungrakwittaya R, Thaworn A, Akarasereenont P, Wongkajornsilp A. Modulation of antioxidant defense by *Alpinia galanga* and *Curcuma aromatica* extracts correlates with their inhibition of UVA-induced melanogenesis. *Cell Biol Toxicol* 2010; 26: 103-116.
15. Kongpatanakul S, Chatsiricharoenkul S, **Panich U**, Sathirakul K, Pongnarin P, Sangvanich P. A randomised, open-label, two-period, crossover, bioequivalence study of two oral formulations of 75 mg oseltamivir in healthy Thai volunteers. *Int J Clin Pharmacol Ther* 2008; 46: 654-62.
16. **Panich U**, Chatsiricharoenkul S, Sathirakul K, Pongnarin P, Bruminhent J, Thangboonjit W, Kongpatanakul S. Bioequivalence Study of a Single 150-mg Dose of Two Intramuscular Netilmicin Products in Thai Healthy Volunteers. *Siriraj Med J* 2008; 60: 259-263.
17. **Ketsawatsakul U**. Modulation by Bicarbonate of the Protective Effects of Phenolic Antioxidants on Peroxynitrite-mediated Cell Cytotoxicity. *ScienceAsia* 2007; 33: 273-282.
18. **Panich U**, Ananta W, Onkoksoong T, Jaemsak K. Effects of cellular uptake of flavonoids against peroxynitrite-mediated cell cytotoxicity. *Siriraj Med J* 2007; 59: 237-241.
19. Whiteman M, **Ketsawatsakul U**, Halliwell B. A reassessment of the peroxynitrite scavenging activity of uric acid. *Ann NY Acad Sci* 2002; 962: 242-259.
20. Whiteman M, **Ketsawatsakul U**, Halliwell B. Inhibition of peroxynitrite-dependent tyrosine nitration and  $\alpha_1$ -antiproteinase inactivation by antioxidants: modulatory effect of bicarbonate. In: *Micronutrients and Health: Molecular Biological Mechanisms*. 2001; (Eds. Nesaretnam, K. & Packer, L.) AOCS Press, IL, USA.
21. **Ketsawatsakul U**, Whiteman M, Halliwell B. A re-evaluation of the peroxynitrite scavenging activity of some dietary phenolics. *Biochem Biophys Res Comm* 2000; 279: 692-699.

### **National Publications**

1. **Panich U**, Chattanachotikul W. Pharmacology of the fluoroquinolones: the update. *Thai J Pharmacol* 2006; 28: 42-55.
2. **Ketsawatsakul U**, Akarasereenont P. Ascorbic acid and atherosclerosis. *Thai J Pharmacol* 2000; 22: 33-45.
3. **อุไรวรรณ พานิช**. สารต้านอนุมูลอิสระกับการยับยั้งความเสื่อมสภาพของผิวหนัง. ใน: วรพล เองวานิช, บรรณาธิการ. หนังสืออนุมูลอิสระและสารต้านอนุมูลอิสระ พิมพ์ครั้งที่ .1. เชียงใหม่ : สมาร์ท โคตดิ่ง แอนด์ เซอร์วิส; 2555 หน้า .357-384.

## Published abstracts, Conference Proceedings and Presentations:

### *International*

1. Whiteman M, **Ketsawatsakul U**, Halliwell B. Enhancement of thiol and disulphide-mediated peroxynitrite-dependent  $\alpha_1$ -antiproteinase inactivation by bicarbonate. *Brit J Pharmacol* 2000; 129: P314.
2. **Ketsawatsakul U**, Whiteman M, Halliwell B. Effects of bicarbonate on the peroxynitrite scavenging activity of polyphenol. *Brit J Pharmacol* 2000; 129; P313.
3. Whiteman M, **Ketsawatsakul U** & Halliwell B. Modulation of peroxynitrite scavenging activity of antioxidants by bicarbonate. *Brit J Pharmacol* 2000; 129: P312.
4. **Ketsawatsakul U**, Whiteman M, Halliwell B. Inhibition of the Peroxynitrite Scavenging Activity of Dietary Phenols by Bicarbonate. Proceedings of the 1<sup>st</sup> Bilateral symposium on advances in molecular biotechnology and biomedicine between the National University of Singapore and University of Sydney, Singapore; 23-24 May 2000.
5. **Ketsawatsakul U**, Whiteman M, Halliwell B. A reevaluation of phenolics on the inhibition of peroxynitrite-mediated chondrosarcoma. Proceedings of the Asia Pacific Conference and Exhibition on Anti-Ageing Medicine, Singapore; 23-26 Jun 2002. P76.
6. **Ketsawatsakul U**, O-charoenrat P, Jamsak K, Ninchawee C, Phonpakobsin T, Thaworn A, Akarasereenont P. The Anti-cancer Effects of Thai Medicinal Plants on Human Head and Neck Squamous Cell Carcinoma Cells: The Possible Roles of Antioxidant Phenolics. Proceedings of the International Conference on Oral Cancer in The Asia Pacific – A Regional Update & Networking, Kuala Lumpur, Malasia; 17-19 Feb 2006. P76.
7. **Ketsawatsakul U**, O-charoenrat P, Jaemsak K, Ninchawee C, Phonpakobsin T, Ananta W, Thaworn A, Huabprasert S, Chotewuttakorn S & Akarasereenont P. The Anticancer Effects of Thai Medicinal Plants Containing Antioxidant Phenolics on Breast Cancer Cells. *Acta Pharmacol Sin* 2006 Jul; (Suppl 1): S319.
8. **Ketsawatsakul U**, Akarasereenont P, Ninchawee C, Phonpakobsin T, Ananta W, Jaemsak K, Thaworn A, Huabprasert S, Chotewuttakorn S, O-charoenrat P. The Anti-cancer Effects of Thai Medicinal Plants Containing Antioxidant Phenolics on Human Breast Cancer Cells: A Correlation of VEGF and eNOS. Proceedings of the International Free Radical Summer School: Biomarkers of oxidative stress and responses, Spetses Island, Greece; 30 Sep – 6 Oct 2006.
9. **Panich U**, Jaemsak K, Onkoksoong T, Thaworn A, Akarasereenont P, Wongkajornsilp A. The inhibitory effects of *Alpinia galanga* and *Curcuma aromatica* extracts containing antioxidant

phenolics on cellular melanogenesis induced by ultraviolet radiation: possible involvement of cellular glutathione. Proceedings of the sixth Princess Chulabhorn International Science Congress, Bangkok, Thailand; 25-29 Nov 2007. P242.

10. **Panich U**, Onkoksoong T, Kongtaphan K, Jaemsak K, Phadungrakwittaya R, Seubnooch P, Akarasereenont P. The inhibitory effects of *Alpinia galanga* and *Curcuma aromatica* extract on UVA-induced melanogenesis induced by modulating cellular glutathione. Prog Biochem Biophys 2008; 35 (Suppl 1): S319.
11. Kongtaphan K, Onkoksoong T, Phornnapa C, Sangiamsuntron K, Akarasereenont P, Wongkajornsilp A, **Panich U**. Antimelanogenic effects of *Phyllanthus emblica* L. extracts containing gallic acid on human melanoma cell lines exposed to ultraviolet radiation A. Proceedings of the second international conference on natural products for health and beauty, Phayao, Thailand; 17-19 Dec 2008. P122.
12. Onkoksoong T, Kongtaphan K, Phadungrakwitya R, Hattakitpanichkul S, Natasut T, Srirama P, Akarasereenont P, **Panich U**. The inhibitory effects of Thai *Brassica oleracea* Bailey (kale) and *Ocimum sanctum* Linn. (holy basil) extracts containing antioxidant phenolics on hydrogen peroxide-induced fibroblast cytotoxicity. Proceedings of the second international conference on natural products for health and beauty, Phayao, Thailand; 17-19 Dec 2008. P179.
13. Tangsupa-a-nan V, Kongtaphan K, Onkoksoong T, Akarasereenont P, Wongkajornsilp A, **Panich U**. Antimelanoma activity of L-ascorbic acid in the inhibition of human melanoma cell proliferation and UVA-induced melanogenesis. Proceedings of the second international conference on natural products for health and beauty, Phayao, Thailand; 17-19 Dec 2008. P89.
14. **Panich U**, Tangsupa-a-nan V, Kongtaphan K, Onkoksoong T, Klumklomjit S, Thaworn A, Akarasereenont P. The inhibitory effects of ascorbic acid on UVA-induced melanogenesis associate with modulation of cellular glutathione and eNOS. Free Rad Biol Med 2009; 47 (Suppl 1): S149.
15. Pongnarin P, Ngokpol S, **Panich U**, Chatsiricharoenkul S, Kongpatanakul S. Liquid chromatography/tandem mass spectrometry assay for the determination of plasma trimetazidine. Free Rad Biol Med 2009; 47 (Suppl 1): S150.
16. **Panich U**, Tangsupa-a-nan V, Kongtaphan K, Onkoksoong T, Akarasereenont P. Protective effect of gallic acid on UVA-induced melanogenesis in relation to modulation of glutathione-related antioxidant defenses. Proceedings of Pan American Society for Pigment Cell Research 2010 Annual Conference, Vancouver, Canada; 30 Sep – 2 Oct 2010.
17. Thangboonjit W, Tangsupa-a-nan V, Kongtaphan K, Onkoksoong T, Akarasereenont P, **Panich U**. Possible involvement of glutathione as a protective role of caffeic and ferulic acids against

- UVA-induced melanogenesis. Proceedings of Pan American Society for Pigment Cell Research 2010 Annual Conference, Vancouver, Canada; 30 Sep – 2 Oct 2010.
18. **Panich U**, Tangsupa-a-nan V, Onkoksoong T, Limsaengurai S, Akarasereenont P. Gallic acid inhibit UVA-induced melanogenesis possibly through up-regulation of glutathione-dependent antioxidant system. *Free Rad Biol Med* 2010; 49 (Suppl 1): S193.
  19. Panich U. Antioxidant Phenolics in the inhibition of UV-induced hyperpigmentation in cultured skin cells. Proceedings of the 3<sup>rd</sup> international conference on natural products for health and beauty, Bangkok, Thailand; 16-18 Mar 2011. P56.
  20. Onkoksoong T, Limsaengurai S, Pluemsamran T, K, Akarasereenont P, **Panich U**. Inhibitory effects of caffeic and ferulic acids on UVA-mediated melanogenesis probably involve the upregulation of glutathione. Proceedings of the 3<sup>rd</sup> international conference on natural products for health and beauty, Bangkok, Thailand; 16-18 Mar 2011. P100.
  21. Limsaengurai S, Onkoksoong T, **Panich U**. In vitro studies of phytochemicals for antityrosinase activity in association with free radical scavenging activity and phenolic contents. Proceedings of the 3<sup>rd</sup> international conference on natural products for health and beauty, Bangkok, Thailand; 16-18 Mar 2011. P145
  22. Pluemsamran T, Onkoksoong T, Limsaengurai S, Akarasereenont P, **Panich U**. The protective effects of phenolic compounds on UVA-induced matrix metalloproteinase-e expression and activity in HaCat cells. Proceedings of the 3<sup>rd</sup> international conference on natural products for health and beauty, Bangkok, Thailand; 16-18 Mar 2011. P143
  23. **Panich U**, Pluemsamran T, Onkoksoong T. Protection by caffeic and ferulic acids against UVA-induced matrix metalloproteinase-1 through promotion of glutathione in keratinocyte HaCaT cells. Proceedings of Oxygen club of California world congress on oxidants and antioxidants in biology: Cell signaling and nutrient-gene interactions, Alba, Italy; 20-23 Jun 2012. P145
  24. Onkoksoong T, Limsaengurai S, Pluemsamran T, Akarasereenont P, Wongkajornsilp A, **Panich U**. Antimelanogenic effects of caffeic and ferulic acids may involve the upregulation of glutathione-S-transferase. Proceedings of the 7<sup>th</sup> Princess Chulabhorn International Science Congress. Cancer: from basic research to cure, Bangkok, Thailand; 29 Nov-3 Dec 2012. P401.
  25. **Panich U**, Tangsupa-a-nan V, Onkoksoong T, Chaiprasongsuk A, Pluemsamran T, and Limsaengurai S. Protection against -Induced Melanogenesis by Dietary Phenolics through Nrf2-Mediated Antioxidant Defenses. *Free Rad Biol Med* 2014; 76 (Suppl 1): S88.
  26. **Panich U**, Chaisiriwong L, Wanitphakdeedecha R, Sitthinamsuwan P, Chatsiricharoenkul S, and Manuskiatti W. A case-control study of involvement of oxidative DNA damage and alteration of antioxidant defense system in patients with basal cell carcinoma: effect of tumor removal.

Proceedings of the 22th Annual Meeting of Society for Redox Biology and Medicine 2015, Boston, MA, USA; 18-21 Nov 2015.

27. **Panich U**, Jeayeng S, Wongkajornsilp A, Jirawatnotai S, Sampattavanich S. UVB-induced DNA damage and apoptosis in melanocytes: modulation by Nrf2 in keratinocytes. Proceedings of Annual Meeting of the Society for Free Radical Research Europe 2016, Budapest, Hungary; 8-11 June 2016.
28. **Panich U**, Chaiprasongsuk A, Lohakul J, Soontrapa K, Sampattavanich S. Photoprotective role of Nrf2 in UVA-mediated MMP1 via MAPK/AP-1 signaling in keratinocyte HaCaT cells and mouse skin: the photoprotective effects of sulforaphane. Proceedings of The 23<sup>rd</sup> Annual Meeting of the Society for Redox Biology and Medicine, a joint meeting with the Society for Free Radical Research International (SFRBM/SFRR 2016), San Francisco, CA, USA; 16-19 Nov 2016.
29. **Panich U**, Onkoksoong T, Pongvarin N, Limsaengurai S, Thamsermsang O, Akarasereenont P. Thai herbal antipyretic 22 formula inhibits melanogenesis through activation of Nrf2-regulated antioxidant defense in UVA-irradiated B16 melanoma cells. Proceedings of the joint OCC 2017 World Congress and the SFRR-Europe 2017 Annual Conference (OCC-SFRR-2017), Berlin, Germany; 21-23 Jun 2017.

### *National*

1. **Ketsawatsakul U**, Rattanasamphan W, Techatraisak K, Thaworn A, Chotewuttakorn S, Plasen D, Akarasereenont P. Effects of ascorbic acid on the expression of cyclooxygenase isoforms in interleukin1 $\beta$ -treated human umbilical vein endothelial cells. Proceedings of the 38th Siriraj Scientific Congress, Siriraj Hospital, Bangkok; Mar 1998. P162-163.
2. Rattanasamphan W, Akarasereenont P, Techatraisak K, Chearskul S, Thaworn A, Chotewuttakorn S, Plasen D, **Ketsawatsakul U**. Effects of 17 $\beta$ -estradiol on cyclooxygenase isoform expressed in human umbilical vein endothelial cells. Proceeding of the 38th Siriraj Scientific Congress, Faculty of Medicine Siriraj Hospital, Bangkok; Mar 1998. P164-165.
3. **Ketsawatsakul U**, Whiteman M, Halliwell B. Peroxynitrite-mediated cytotoxicity: A re-evaluation of the protective effect of dietary phenolics. Proceedings of the 44<sup>th</sup> Siriraj Scientific Congress, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand; 15-19 Mar 2004. P39.
4. Jamsak K, Tappayuthpijarn P, Wongkajornsilp A, Ninchawee C, Huabprasert S, **Ketsawatsakul U**. The Effects of Four Medicinal Plants on Cytotoxicity of Human Melanoma cells. Proceedings of the 45<sup>th</sup> Siriraj Scientific Congress, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand; 4-8 July 2005. P21.

5. **Ketsawatsakul U**, Akarasereenont P, Wongkajornsilp A, O-charoenrat P, Jamsak K, Tappayuthpijarn P, Ninchawee C, Chotewuttakorn S, Thaworn A, Huabprasert S. The Inhibitory Effects of Thai Medicinal Plants on the Proliferation of Human Cancer cells: The Possible Role of Antioxidants. Proceedings of the 45<sup>th</sup> Siriraj Scientific Congress, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand; 4-8 July 2005. P22.
6. **Ketsawatsakul U**, Whiteman M, Halliwell B. The uptake of flavonoids in human chondrosarcoma and colon cancer cells: An Evaluation of Intracellular Phenolic Contents. Proceedings of the 45<sup>th</sup> Siriraj Scientific Congress, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand; 4-8 July 2005. P23.
7. Ketsawatsakul U. Clinical implication of antioxidants in ageing and cancer. Proceedings of the 45<sup>th</sup> Siriraj Scientific Congress, Excellent medical practices for better quality of life, Faculty of Medicine, Siriraj Hospital, Mahidol University, Thailand; 4-8 July 2005. P95-97.
8. Ketsawatsakul U. Diet and breast cancer. Proceedings of the Siriraj-Ramathibodi Medical Congress, Together towards excellence in health care, Bangkok, Thailand; 18-21 April 2006. P217-220.
9. **Ketsawatsakul U**, Jamsak K, Ninchawee C, Tappayuthpijarn P, Thaworn A, Ananta W, Chotewuttakorn S, O-charoenrat P, Akarasereenont P, Wongkajornsilp A. The identification of phenolic antioxidants in Thai medicinal plants: their anti-proliferative effects on human cancer cells. Proceedings of the Siriraj-Ramathibodi Medical Congress, Mahidol University, Bangkok, Thailand; 18-21 April 2006. P29.
10. Jaemsak K, Tappayuthpijarn P, Ninchawee C, Huabprasert S, Thaworn A, Ananta W, Akarasereenont P, Wongkajornsilp A, **Ketsawatsakul U**. The Phytochemical Evaluation and the Antioxidant Activity of Medicinal Plants: The Effects on Antioxidant Enzymes in Human Melanoma Cell lines. Proceedings of the Siriraj-Ramathibodi Medical Congress, Mahidol University, Bangkok, Thailand; 18-21 April 2006. P29.
11. Lupreechaset A, Ananta W, Jaemsak K, Thaworn A, Chotewuttakorn S, Akarasereenont P, **Ketsawatsakul U**. Inhibitory Effects of Thai Medicinal Plants Containing Phenolic Compounds on Human Breast Cancer Cell Proliferation: Do They Involve Cellular Glutathione? Proceedings of the 47<sup>th</sup> Siriraj Scientific Congress, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand; 5-9 Mar 2007. P31.
12. Jaemsak K, Thaworn A, Ananta W, Tappayuthpijarn P, Huabprasert S, Wongkajornsilp A, Akarasereenont P, **Ketsawatsakul U**. The effects of ultraviolet radiation on cellular antioxidants in human melanoma cells: modulation by Thai Medicinal plants-derived antioxidant phenolics. Proceedings of the 47<sup>th</sup> Siriraj Scientific Congress, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand; 5-9 Mar 2007. P32.

13. **Ketsawatsakul U**, Onkoksoong T, Ananta W, Jaemsak K, Ninchawee C, Phonpakobsin T, Thaworn A, O-charoenrat P, Akarasereenont P. VEGF and eNOS Associated with the Anti-cancer Effects of Thai Medicinal Plants Containing Antioxidant Phenolics on Human Breast Cancer Cells. Proceedings of the 47<sup>th</sup> Siriraj Scientific Congress, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand; 5-9 Mar 2007. P75.
14. Panich U. Pharmacology of Antimicrobials for the Treatment of Orthopaedic Infections. Proceedings of the 29<sup>th</sup> annual meeting of the royal college of orthopaedic surgeons of Thailand, Pattaya, Thailand; 19-22 Oct 2007.
15. Kongtaphan K, Onkoksoong T, Chareonkij P, Sa-ngaimsuntron K, Akarasereenont P, Wongkajornsilp A, **Panich U**. *In vitro* anti-tyrosinase activity of *Phyllanthus emblica* L. extracts containing antioxidant phenolics and ascorbic acid in the inhibition of melanin production in human melanoma cell line exposed to ultraviolet radiation. Proceedings of the 47<sup>th</sup> Siriraj Scientific Congress-the 120<sup>th</sup> Anniversary of Siriraj Hospital, Mahidol University, Bangkok, Thailand; 17-21 Mar 2008. P1.
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18. Tangsupa-a-nan V, Kongtaphan K, Onkoksoong T, Klumklomjit S, Akarasereenont P, Wongkajornsilp A, **Panich U**. The inhibitory effect of Siriraj Wattana Recipe and gallic acid on UVA-mediated melanogenesis by modulation of cellular glutathione. Proceedings of the joint conference in medical sciences 2009, Bangkok, Thailand; 22-24 Jun 2009. P122.
19. Huabprasert S, Wongkajornsilp A, Akarasereenont P, **Panich U**, Laohapand T, Kasetsinsombat K, Kangsakalampai K. *Phyllanthus emblica* increased the proliferation of mouse splenocytes while suppressing mouse lymphoma cell growth. Proceedings of the 2<sup>nd</sup> national conference in toxicology, Bangkok, Thailand; 17-18 Dec 2009. P161.
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21. Chaisiriwong L, Wanitphakdeedecha R, Sittinamsuwan P, Chatsirlcbaroenkul S, **Panich U**. Oxidative DNA damage and antioxidant defense status in patients with non-melanoma skin cancer. Thai J Pharmacology 2014; 36 (Suppl 1): S22.

22. **Panich U**, Chaisiriwong L, Wanitphakdeedecha R, Sittinamsuwan P, Chatsirlcbaroenkul S, Soontarapa K. A clinical case-control study on markers of oxidative stress and antioxidant enzyme defenses of non-melanoma skin cancer patients. *Siriraj Med J* 2014;66 (July-August): A50.

**Symposia Contributions/Invited speaker:**

1. "Antioxidants in Alzheimer's disease." Interdepartmental Conference, Faculty of Medicine, Siriraj Hospital, Bangkok, Thailand; 13 Jul 2004.
2. "Clinical implication of antioxidants in ageing and cancer." The 45<sup>th</sup> Siriraj Scientific Congress, Excellent medical practices for better quality of life, Faculty of Medicine, Siriraj Hospital, Mahidol University, Thailand; 4-8 July 2005.
3. "Diet and breast cancer." The Siriraj-Ramathibodi Medical Congress, Together towards excellence in health care, Bangkok, Thailand; 18-21 April 2006.
4. "Pharmacology of Antimicrobials for the Treatment of Orthopaedic Infections." The 29<sup>th</sup> annual meeting of the royal college of orthopaedic surgeons of Thailand, Pattaya, Thailand; 19-22 Oct 2007.
5. "Pharmacology of betalactam: aspects of hypersensitivity." Interdepartmental Conference, Faculty of Medicine, Siriraj Hospital, Bangkok, Thailand; 29 Aug 2008.
6. "Anti-aging pharmacology: Antioxidants and longevity." The joint conference in medical sciences, Bangkok, Thailand; 22-24 Jun 2009.
7. Anti-aging Pharmacotherapy. The menopause academic conference 2010, Bangkok, Thailand; 19-21 Jul 2010.
8. Antioxidant Phenolics in the Inhibition of UV-induced Hyperpigmentation in Cultured Skin Cells. The 3<sup>rd</sup> international conference on natural products for health and beauty, Bangkok, Thailand; 16-18 Mar 2011.
9. Antioxidants in skin aging prevention. The 14<sup>th</sup> Food Innovation Asia Conference 2012, BITEC, Bangkok, Thailand; 14-16 Jun 2012.
10. How to research in Thai traditional medicine in multidisciplinary approach?: Inhibition of UVA-induced melanogenesis by the AVS073 through antioxidant mechanisms involving GSH. National and international conference in medicine and public health to commemorate the 150<sup>th</sup> anniversary of the birth of Queen Sri Savarindira, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand; 17-21 Sep 2012.
11. Topical treatment of melasma. La Roche-Posay Academic Course, The St Regis Bangkok, Thailand; 2 Nov 2012.

12. The roles of antioxidant in prevention of photoaging. The first conference and workshop on health and beauty products, University of Thai Chamber of Commerce, Bangkok, Thailand; 22 Nov 2013.
13. The Role of Antioxidants in the Inhibition of Photoaging: Studies of Phytochemicals as Promising Photoprotective Agents. The Medical Conference 2014, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand; 8 Jun 2014.
14. “Botanical antioxidants as promising photoprotective agents against skin aging.” International mini-conference. BASIC TO TRANSLATIONAL MEDICINE 2015. Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand; 20 Oct 2015.
15. Fighting against aging: Current perspectives. การอบรมวิชาการสรีรวิทยา-พยาธิสรีรวิทยา ครั้งที่ 34 ประจำปี 2559 เรื่อง “Aging: Physiology and Care สรีรวิทยาและการดูแลผู้สูงอายุ” คณะแพทยศาสตร์ศิริราชพยาบาล มหาวิทยาลัยมหิดล วันที่ 22 มิถุนายน 2559
16. Dermatological Pharmacology: Topical Agents for Common Skin Problems. Academy Program for Dermatological Residents “Total Dermatology Solution: Treat and Daily Care”, Intercontinental Hotel, Bangkok, Thailand; 26 Aug 2016.
17. The role of antioxidants in the prevention of skin photoaging and photocarcinogenesis. The JSPS-NRCT Follow-Up Seminar 2017 and 33<sup>rd</sup> International Annual Meeting in Pharmaceutical Sciences (JSPS-NRCT 2017 and IAMP33). The Berkeley Hotel Pratunam, Bangkok, Thailand; 3 Mar 2017.

## Research experiences

### ทุนวิจัยที่เคยได้รับ

ลำดับที่	ชื่อโครงการและสถานภาพ	แหล่งทุน	ระยะเวลาโครงการ
1	The roles of nitric oxide in modulating VEGF/VEGFR signalling pathways in human umbilical vein endothelial cells: the inhibitory effects of dietary phenolics สถานภาพ: หัวหน้าโครงการวิจัย	ทุนพัฒนางานวิจัย คณะแพทยศาสตร์ศิริราชพยาบาล	2 ปี (พ.ศ. 2547-2549)
2	ผลของสารสกัดจากขมิ้นชัน (tetrahydrocurcuminoid; THC) ใน GPO curmin cream ต่อการป้องกันและยับยั้งความเสื่อมสภาพของผิวหนัง สถานภาพ: หัวหน้าโครงการวิจัย	องค์การเภสัชกรรม	2 ปี (พ.ศ. 2549-2551)



ทุนวิจัยที่กำลังดำเนินงานอยู่

ลำดับที่	ชื่อโครงการและสถานภาพ	แหล่งทุน	ระยะเวลาโครงการ
1	The effects of UVB on apoptosis of melanocyte in association with redox modulation using melanocyte-keratinocyte co-culture model สถานภาพ: หัวหน้าโครงการวิจัย	ทุนโครงการปริญญาเอก กาญจนาภิเษก ระหว่าง สำนักงานกองทุน สนับสนุนการวิจัยและ คณะแพทยศาสตร์ศิริราช พยาบาล	4 ปี (พ.ศ. 2556-2560)
2	การพัฒนาและศึกษากลไกการควบคุมระบบต้านอนุมูล อิสระของสารยับยั้งความเสื่อมสภาพของผิวหนังโดยการ ใช้ไบโอเซนเซอร์ (แผนงานวิจัย: ระบบไบโอเซนเซอร์ รับศึกษากลไกการเกิดโรคที่สำคัญและการพัฒนายา ใหม่) สถานภาพ: หัวหน้าโครงการวิจัย	สำนักงานคณะกรรมการ วิจัยแห่งชาติ	3 ปี (พ.ศ. 2559-2562)
3.	บทบาทการยับยั้งของ nuclear factor erythroid2- related factor2 (Nrf2) ต่อความเสื่อมสภาพของ ( ผิวหนังในเซลล์ผิวหนัง human melanocytes ที่ เพาะเลี้ยงร่วมกับ human keratinocytes และใน ผิวหนังของหนู	สำนักงานกองทุน สนับสนุนการวิจัยและ มหาวิทยาลัยมหิดล	3 ปี (พ.ศ. 2559-2562)