Asst. Prof Rossarin Tansawat

Chulalongkorn University,
Bangkok, Thailand

Rossarin Tansawat is an Assistant Professor at the Department of Food and Pharmaceutical Chemistry, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. She earned a bachelor's degree in pharmaceutical sciences with honors from Chulalongkorn University in 2005. She received a master's degree in 2009 and a doctorate in Nutrition and Food Sciences from Utah State University, Utah, USA in 2012. Through her graduate studies, she was awarded a USDA scholarship. Following that, in 2016 she worked as a visiting scientist at the West Coast Metabolomics Center, University of California, Davis, USA in 2016. Her research focus is on metabolomic studies in food and nutrition. Mass spectrometry-based metabolomics approach is her fields of expertise. She is an active participant in metabolomics workshops and attends professional conferences and seminars on a regular basis. In 2023, she established Chulalongkorn University's Metabolomics for Life Sciences Research Unit. She was also a co-founder of the official Thailand Metabolomics Society (TMS) and now serves as the society's secretary.

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EDUCATION

Ph.D. in Nutrition and Food Sciences AUG 2012
Utah State University, Logan, UT, USA

M.S. in Nutrition and Food Sciences APR 2009
Utah State University, Logan, UT, USA

B.S. in Pharmaceutical Sciences, with honors, Major: Food Chemistry R&D MAR 2005
Chulalongkorn University, Bangkok, Thailand

RESEARCH EXPERIENCE

Chulalongkorn University, Bangkok, Thailand
- *Head of Metabolomics for Life Sciences Research Unit* 2023 – present

University of California, Davis, NIH: West Coast Metabolomics Center, USA
- *Visiting Scientists* Fall 2016

Utah State University, Department of Nutrition and Food Sciences, Logan, UT, USA
- *Graduate Research Assistant* 2006 – 2012

TEACHING EXPERIENCE

Chulalongkorn University, Department of Food and Pharmaceutical Chemistry, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand
- *Assistant Professor* 2018 – present
- *Lecturer* 2013 – 2018

Utah State University, Department of Nutrition and Food Sciences, Logan, UT, USA
- *Teaching Assistant* Spring 2012
- *Lab Instructor* Fall 2008 – 2011

OTHER EXPERIENCES

MIMS, Thailand
- *Medical journal editor* JAN – JUL 2006

Boots Ltd., Thailand
- *Pharmacist*, Boots Ltd., Bangkok, Thailand 2005 – 2006

PUBLICATIONS

Sirilertpanich, P., Ekkaphan, P., Andriyas, T., Leksungnoen, N., Ruengphayak, S., Vanavichit, A., De-Eknamkul, W., & Tansawat, R.* (2023). Metabolomics study on the main volatile components of thai colored rice cultivars from different agricultural locations. *Food Chemistry,* 137424.

Mahamud, N., Songvut, P., Muangnoi, C., Rodsiri, R., Dahlan, W., & Tansawat, R.* (2023). Untargeted metabolomics reveal pathways associated with neuroprotective effect of oxyresveratrol in SH-SY5Y cells. *Scientific Reports, 13*(1), 20385.

Sungthong, R., Khine, H. E. E., Sumkhemthong, S., Chanvorachote, P., Tansawat, R.*, & Chaotham, C*. (2023). How do prolonged anchorage-free lifetimes strengthen non-small-cell lung cancer cells to evade anoikis?–A link with altered cellular metabolomics. *Biological Research, 56*(1), 1-12.

Tansawat, R.*, Jindawatt, S., Ekkaphan, P., Ruengphayak, S., Vanavichit, A., Suttipanta, N., Vimolmangkang, S. & De-Eknamkul, W.* (2023). Metabolomics Approach to Identify Key Volatile Aromas in Thai Colored Rice Cultivars. *Frontiers in Plant Science,* 14, 541.

Siriwong, N., Sukaram, T., Tansawat, R., Apiparakoon, T., Tiyarattanachai, T., Marukatat, S., Rerknimitr, R., & Chaiteerakij, R. (2022). Exhaled Volatile Organic Compounds for Diagnosis of Cholangiocarcinoma. *Liver Research, 6*(3), 191-197.

Sukaram, T., Tansawat, R., Apiparakoon, T., Tiyarattanachai, T., Marukatat, S., Rerknimitr, R., & Chaiteerakij, R. (2022). Exhaled volatile organic compounds for diagnosis of hepatocellular carcinoma. *Scientific reports, 12*(1), 1-9.

Songvut, P., Chariyavilaskul, P., Khemawoot, P.*, & Tansawat, R.* (2021) Pharmacokinetics and metabolomics investigation of an orally modified formula of standardized *Centella asiatica* extract in healthy volunteers. *Scientific Reports, 11*(1), 1-13.

Rodsiri, R., Benya-aphikul, H., Teerapattarakan, N., Wanakhachornkrai, O., Boonlert, W., Tansawat, R., Wiwattanapatapee, R., Sritularak, B., & Likhitwitayawuid, K. (2020). Neuroprotective effect of oxyresveratrol in rotenone-induced parkinsonism rats. *Natural Product Communications, 15*(10), pp.1934578X20966199.

Teerasarntipan, T., Sukaram, T., Tansawat, R., Rerknimitr, R., & Chaiteerakij, R. (2020). Mo1397 volatile organic compounds (VOC) as potential biomarker for hepatocellular carcinoma (HCC) detection. *Gastroenterology, 158*(6), S-1393.

Intararuchikul, T., Teerapattarakan, N., Rodsiri, R., Tantisira, M., Wohlgemuth, G., Fiehn, O., & Tansawat, R.* (2019). Effects of *Centella asiatica* extract on antioxidant status and liver metabolome of rotenone-treated rats using GC–MS. *Biomedical Chromatography, 33*(2), e4395.

Teerapattarakan, N., Benya-aphikul, H., Tansawat, R., Wanakhachornkrai, O., Tantisira, M. H., & Rodsiri, R. (2018). Neuroprotective effect of a standardized extract of *Centella asiatica* ECa233 in rotenone-induced parkinsonism rats. *Phytomedicine,* 44, 65-73.

Tipchuwong, N., Chatraporn, C., Ngamchuachit, P., & Tansawat, R.* (2017). Increasing retention of vitamin D3 in vitamin D3 fortified ice cream with milk protein emulsifier. *International Dairy Journal, 74*, 74-79.

Chansathirapanich, W., Ngamchuachit, P. & Tansawat, R.* (2016). Effect of fat content on characteristics of ice cream fortified with calcium and vitamin D. *Thai Journal of Pharmaceutical Sciences, 40*(3), 132-138.

Euaruksakul, P., Tansawat, R., & Rodsiri, R. (2015). Ginseng extract G115 improves locomotor function in rotenone-induced parkinsonism rats via an antioxidant effect. *Songklanakarin Journal of Science & Technology*, *37*(2).

Maughan, B., Provenza, F. D., Tansawat, R., Maughan, C., Martini, S., Ward, R. E, Clemensen, Song X., Cornforth, D. P. & Villalba, J. J. (2014). Importance of grass–legume choices on cattle grazing behavior, performance and meat characteristics. *Journal of animal science*, *92*(5), 2309-2324.

Brogna, D. M. R., Tansawat, R., Cornforth, D., Ward, R., Bella, M., Luciano, G., Priolo, A. & Villalba, J. (2014). The quality of meat from sheep treated with tannin-and saponin-based remedies as a natural strategy for parasite control. *Meat science*, *96*(2), 744-749.

Tansawat, R., Maughan, C. A., Ward, R. E., Martini, S., & Cornforth, D. P. (2013). Chemical characterisation of pasture-and grain-fed beef related to meat quality and flavour attributes. *International Journal of Food Science & Technology*, *48*(3), 484-495.

Maughan, C., Tansawat, R., Cornforth, D., Ward, R., & Martini, S. (2012). Development of a beef flavor lexicon and its application to compare the flavor profile and consumer acceptance of rib steaks from grass-or grain-fed cattle. *Meat science*, *90*(1), 116-121.

PRESENTATIONS & ABSTRACTS

Mahamad, N., Songvut, P., Muangnoi, C., Rodsiri, R., Dahlan, W. & Tansawat, R. (2023) Metabolomics approach for potential biomarkers discovery of oxyresveratrol against oxidative stress in SH-SY5Y human neuroblastoma cell line. 19th Annual Conference of the Metabolomics Society, Niagara Falls, Canada, June 18-22.

Sirilertpanich, P., Ekkaphan, P., Ruengphayak, S., Vanavichit, A., De-Eknamkul & Tansawat, R. (2023) metabolomics study on the main volatile components of Thai colored rice cultivars from different agricultural locations. 19th Annual Conference of the Metabolomics Society, Niagara Falls, Canada, June 18-22.

Tansawat, R., Benya-aphikul, H. & Rodsiri, R. (2019) Effect of G115 in alcohol-induced liver injury mice. Merlion Metabolomics Symposium, Singapore, November 21-22.

Chaiteerakij, R. & Tansawat, R. (2019) Volatile organic compounds as biomarkers for diagnosis of hepatocellular carcinoma. Digestive Disease Week, San Diego, CA, USA, May 18-21.

Intararuchikul, T., Teerapattarakan, N., Rodsiri, R., Tantisira, M., Wohlgemuth, G., Fiehn, O. & Tansawat, R. (2017). Protective effect of the standardized extract of *Centella asiatica* ECa233 in rotenone-induced liver injured rats as revealed by metabolomic analysis. The 13rd Annual Conference of the Metabolomics Society, Brisbane, Australia, June 25-29.

Tipchuwong, N., Chatraporn, C. & Tansawat, R. (2016). Vitamin D emulsion stability using milk protein emulsifier. NIZO Dairy Conference, Singapore, November 8-10.

Chansathirapanich, W., Meksawan, K., Ngamchuachit, P. & Tansawat, R. (2015). Development and evaluation of physical and microbiological properties of calcium and vitamin D3 fortified ice cream. The 17th International Conference on Nutrition and Food Sciences, Zurich, Switzerland, July 29-30.

Tansawat, R., Van Groenou, L. B., Pinyowattayakorn, P., Yostumrong, S., Tongyonk, L., Auamnoy, T. (2015). Factors affecting green tea brand loyalty in young adult consumers. The 12th Asian Congress of Nutrition, Yokohama, Japan, May 14-18.

Tansawat, R., Cornforth, D. P. & Ward, R. E. (2013). Metabolomic analysis of lamb muscle as affected by tannin or saponin supplemented diet of animals infected with red stomach worm larvae. The 4th International Conference on Nutrition and Physical Activity, Pattaya, Cholburi, Thailand, August 15-16.

Tansawat, R., Song, X., Owen, E., Stone, B., Martini, S. & Cornforth, D. P. (2013). Effect of Beefxide® treatment of beef trim on ground beef properties. Institute of Food Technologists National Meeting, Chicago, IL, USA, July 15.

Tansawat, R., Ward, R. E., Martini, S. & Cornforth, D. P. (2012). Sainfoin is equivalent to alfalfa as a beef cattle forage. Intermountain Student Poster Competition, Utah State University, Logan, UT, USA, April 5.

Tansawat, R., Ward, R. E., Martini, S. & Cornforth, D. P. (2011). Chemical characterization of grass- and grain-fed beef related to meat quality and flavor attributes. Reciprocal Meat Conference, American Meat Science Association, Kansas State University, Manhattan, KS, USA, June 19.

Tansawat, R., Cornforth, D. P., Ward, R. E. & Frame, D. P. (2010). Antioxidant status and thiobarbituric acid value of raw turkey muscle from birds fed Camelina meal, a high ω-3 fatty acid supplement. Institute of Food Technologists National Meeting, Chicago, IL, USA, July 19.

Tansawat, R. & Cornforth, D. P. (2009). Iron binding by milk mineral - A possible antioxidant and anti-microbial mechanism. Reciprocal Meat Conference, American Meat Science Association, University of Arkansas, Rogers, AK, USA, June 23.

Tansawat, R. & Cornforth, D. P. (2009). Decomposition of milk mineral and sodium tripolyphosphate by bacterial growth in ground beef. IFT Bonneville Section Suppliers Night Poster Competition, Salt Lake City, UT, USA, April 7.

SERVICE ON GRADUATE COMMITTEES

Arashaporn Uthairangsee, Current. M.Sc. in Pharmaceutical Sciences and Technology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Piyawadi Khaoiam, Current. M.Sc. in Pharmaceutical Sciences and Technology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Nalinrat Puangnil, Current. M.Sc. in Pharmaceutical Sciences and Technology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Pakawat Sirilertpanich, Current. Metabolomics study on the main volatile components of thai colored rice cultivars from different agricultural locations. M.Sc. in Pharmaceutical Sciences and Technology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Nureesun Mahamad. Current. Metabolomics approach for discovery of biomarker for Parkinson's disease in neuroblastoma SH-SY5Y cells treated by oxyresveratrol from *Artocarpus lacucha* heartwood. Ph.D. in Pharmaceutical Chemistry and Natural Products, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Supawat Jindawatt. 2022. Identification of aroma compounds in Thai colored rice varieties. M.Sc. in Food Chemistry and Medical Nutrition, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Phanit Songvut. 2020. Pharmacokinetic and metabolomic studies of standardized extract of *Centella asiatica* (ECa233) capsule in Thai healthy volunteers. Ph.D. in Pharmacology and Toxicology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Intararuchikul, Thidarat. 2018. Hepatoprotective effects of *Centella asiatica* extract (ECa233) in rat liver injury induced by rotenone. M.Sc. in Food Chemistry and Medical Nutrition, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Tipchuwong, Narduma. 2017. Development of ice cream fortified with calcium and vitamin D3 emulsion. M.Sc. in Food Chemistry and Medical Nutrition, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. (Advisor)

Chansathirapanich, Weeraya. 2016. Effect of fat content on vitamin D retention and characteristics of ice cream. M.Sc. in Food Chemistry and Medical Nutrition, Chulalongkorn University, Thailand. (Advisor)

Bumrungthai, Kamonphan. 2017. The effects of active ingredients in essential oil extracted from *Acalypha indica* on domestic cat behavior and acute stress. M.Sc. in Animal Nutrition, Faculty of Veterinary Science, Chulalongkorn University, Thailand. (Co-advisor)

Euaruksakul, Pailin. 2015. Neuroprotective effect of ginseng extract g115 in rotenone-induced parkinsonism rat model. M.Sc. in Pharmacology and Physiology, Chulalongkorn University, Thailand. (Co-advisor)

CERTIFICATION & LICENSE

- Certificates
  - International Sessions in Metabolomics, NIH: West Coast Metabolomics Center, University of California, Davis, USA, 2016
  - Herbal Metabolomics Workshop, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand, 2015 (Keynote speaker: Dr. Johanna Michl, Department of Oncology, University of Oxford, UK)
  - International Conference on Traditional Medicines “Update in Herbal Medicine and Quality Analysis”, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand, 2015 (Keynote speaker: Prof. Michael Heinrich, Centre for Pharmacognosy and Phytotherapy, School of Pharmacy, University College London, UK)
  - The continuing educational short course “Antioxidants: Fundamentals, Applications and Health Effects”, IFT, Chicago, IL, USA, 2013
  - International Teaching Assistance Workshop, USU, Logan, UT, USA, 2010
  - Laboratory Safety Initial Training, USU, Logan, UT, USA, 2007
- Thai Professional Pharmacist License (No.19491)

MEMBERSHIPS

- Chulalongkorn University Metabolomics for Life Sciences Research Unit, 2023 – present
- Thailand Metabolomics Society, 2019 – present
- Metabolomics Society, 2017
- Thai Journal of Pharmaceutical Science editorial board, 2013 – present
- USU alumni association, 2009 – present
- IFT membership, 2007 – 2014
- USU Food Science club, 2006 – 2012
- Thai Pharmacy Council, 2005 – present
- Chulalongkorn University alumni association, 2005 – present