

Curriculum Vitae

1. Name – Surname Mr. Jutarop Phetcharaburanin

2. Current Position Assistant Professor of Systems Biology

3. Affiliation and Contact

Department of Systems Biosciences and Computational Medicine,
Faculty of Medicine; and Khon Kaen University Phenome Centre,
Thailand

Mobile: +66(0)615474192

E-mail: jutarop@kku.ac.th

4. Education

Year of Completion	Degree Level	Degree Title	Institute	Country
2011	Bachelor's Degree	BSc (Hons) Biomedical Sciences	University of London	United Kingdom
2012	Master's Degree	MSc (Distinction) Biomedical Sciences	University of London	United Kingdom
2018	Doctoral Degree	PhD Clinical Medicine Research (Computational and Systems Medicine)	Imperial College London	United Kingdom

5. Work Experience

- 2023 – Present Adjunct Associate Professor, Health Futures Institute, Australian National Phenome Centre, Murdoch University, Australia
- 2022 – Present Assistant Professor of Systems Biology, Faculty of Medicine, Khon Kaen University, Thailand
- 2012 – 2022 Lecturer, Department of Biochemistry, Faculty of Medicine, Khon Kaen University, Thailand (PhD Study Leave during 2013 – 2018)
- 2013 – 2018 Research Associate, Imperial College London, London, United Kingdom

6. Expertise

Systems Medicine, Metabolic Syndrome, Metabolomics, Nutrigenomics, Nutrigenetics and Microbiomics

7. Administrative and Managing Positions

- 2022 – Present Executive Chairperson, Khon Kaen University Phenome Centre, Khon Kaen University, Khon Kaen, Thailand
- 2019 – Present Assistant Dean for Research and International Relations Affairs, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand
- 2019 – Present Acting Director (out-of-working hours), Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand
- 2019 – Present Co-Founder and Committee, Thailand Metabolomics Society, Thailand
- 2019 – 2022 Executive Committee and Assistant Secretary for Khon Kaen University International Phenome Laboratory, Khon Kaen University, Khon Kaen, Thailand
- 2019 Acting Assistant Dean for International Relations and Cooperative Strategy, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

8. Honours and Awards

- 2023 Honorary Academic Staff, Faculty of Medicine, Khon Kaen University, Thailand
- 2023 Adjunct Associate Professorship at Health Futures Institute, Australian National Phenome Centre, Murdoch University, Australia
- 2022 Honorary Academic Staff, Faculty of Medicine, Khon Kaen University, Thailand
- 2022 Finalist, UK Alumni Award in Science and Sustainability, British Council, United Kingdom
- 2022 Research Fellowship, Cholangiocarcinoma Research Institute of United States, United States
- 2021 Associate Member of Royal Society of Chemistry (AMRSC), United Kingdom
- 2014 Molecular Medicine Fellowship, Molecular Medicine Tri-Conference Fellowship, United States

- 2013 Young Scientist Meeting Grant, The Federation of European Microbiological Society (FEMS), Netherlands
- 2013 Alumni Bursary, Royal Holloway University of London, United Kingdom
- 2008 Student with Good Achievement, Cambridge Centre for Sixth-form Studies, United Kingdom
- 2007 Student with Good Achievement, Cambridge Centre for Sixth-form Studies, United Kingdom
- 2006 Royal Thai Government Scholarship, Office of the Civil Service Commission, Thailand

9. Publications (h-index = 14 and 903 citations)

A total of 48 published peer-reviewed articles are listed below:

(1) Ahmad MS, Minaee N, Serrano-Contreras JI, Kaluarachchi M, Shen EY, Boulange C, Ahmad S, **Phetcharaburanin J**, Holmes E, Wist J, Albaloshi AH, Alaama T, Damanhoury ZA, Lodge S. Exploring the Interactions between Obesity and Diabetes: Implications for Understanding Metabolic Dysregulation in a Saudi Arabian Adult Population. *J Proteome Res.* 2024 Feb 2;23(2):809-821. doi:

10.1021/acs.jproteome.3c00717. Epub 2024 Jan 17. PMID: 38230637; PMCID: PMC10846529.

(2) Lo Piccolo L, Yeewa R, Pohsa S, Yamsri T, Calovi D, **Phetcharaburanin J**, Suksawat M, Kulthawatsiri T, Shotelersuk V, Jantrapirom S. FAME4-associating YEATS2 knockdown impairs dopaminergic synaptic integrity and leads to seizure-like behaviours in *Drosophila melanogaster*. *Prog Neurobiol.* 2024 Feb;233:102558. doi: 10.1016/j.pneurobio.2023.102558. Epub 2023 Dec 20. PMID: 38128822.

(3) Kulthawatsiri T, Kittirat Y, **Phetcharaburanin J**, Tomacha J, Promraksa B, Wangwiwatsin A, Klanrit P, Titapun A, Loilome W, Namwat N. Metabolomic analyses uncover an inhibitory effect of niclosamide on mitochondrial membrane potential in cholangiocarcinoma cells. *PeerJ.* 2023 Nov 22;11:e16512. doi: 10.7717/peerj.16512. PMID: 38025687; PMCID: PMC10676079.

(4) Bunma C, Noinarin P, **Phetcharaburanin J**, Chareonsudjai S. *Burkholderia pseudomallei* biofilm resists *Acanthamoeba* sp. grazing and produces 8-O-4'-diferulic acid, a superoxide scavenging metabolite after passage through

the amoeba. Sci Rep. 2023 Oct 3;13(1):16578. doi: 10.1038/s41598-023-43824-1. PMID: 37789212; PMCID: PMC10547685.

(5) Loilome W, Namwat N, Jusakul A, Techasen A, Klanrit P, **Phetcharaburanin J**, Wangwiwatsin A. The Hallmarks of Liver Fluke Related Cholangiocarcinoma: Insight into Drug Target Possibility. Recent Results Cancer Res. 2023;219:53-90. doi: 10.1007/978-3-031-35166-2_4. PMID: 37660331.

(6) Chaiyachat P, Kaewseekhao B, Chaiprasert A, Kamolwat P, Nonghanphithak D, **Phetcharaburanin J**, Sirichoat A, Ong RT, Faksri K. Metabolomic analysis of Mycobacterium tuberculosis reveals metabolic profiles for identification of drug-resistant tuberculosis. Sci Rep. 2023 May 27;13(1):8655. doi: 10.1038/s41598-023-35882-2. PMID: 37244948; PMCID: PMC10224971.

(7) Treeriyaa R, Ho PN, Titapun A, Klanrit P, Suksawat M, Kulthawatsiri T, Sirirattanakul S, Loilome W, Namwat N, Wangwiwatsin A, Chamadol N, Khuntikeo N, **Phetcharaburanin J**. ¹H NMR fecal metabolic phenotyping of periductal fibrosis- and cholangiocarcinoma-specific metabotypes defining perturbation in gut microbial-host co-metabolism. PeerJ. 2023 May 9;11:e15386. doi: 10.7717/peerj.15386. PMID: 37187520; PMCID: PMC10178365.

(8) Wangwiwatsin A, Kulwong S, **Phetcharaburanin J**, Namwat N, Klanrit P, Loilome W, Maleewong W, Reid AJ. Toward novel treatment against filariasis: Insight into genome-wide co-evolutionary analysis of filarial nematodes and *Wolbachia*. Front Microbiol. 2023 Mar 22;14:1052352. doi: 10.3389/fmicb.2023.1052352. PMID: 37032902; PMCID: PMC10073474.

(9) Phukhum P, **Phetcharaburanin J**, Chaleekarn K, Kittirat Y, Kulthawatsiri T, Namwat N, Loilome W, Khuntikeo N, Titapun A, Wangwiwatsin A, Khampitak T, Suksawat M, Klanrit P. The impact of hypoxia and oxidative stress on proteo-metabolomic alterations of 3D cholangiocarcinoma models. Sci Rep. 2023 Feb 21;13(1):3072. doi: 10.1038/s41598-023-30204-y. PMID: 36810897; PMCID: PMC9944917.

(10) Uttamamul N, Suksawat M, **Phetcharaburanin J**, Jitpean S, Lulitanond A, Sae-

Ung N, Boonsiri P, Tavichakorntrakool R. 1H NMR metabolic profiling of *Staphylococcus pseudintermedius* isolated from canine uroliths. *PLoS One*. 2022 Nov 17;17(11):e0277808. doi: 10.1371/journal.pone.0277808. PMID: 36395195; PMCID: PMC9671361.

(11) Nahok K, Selmi C, Sukmak M, **Phetcharaburanin J**, Li JV, Silsirivanit A, Thanan R, Sharma A, Anutrakulchai S, Hammock BD, Cha'on U. Reply to Chao et al. Comment on "Nahok et al. Monosodium Glutamate Induces Changes in Hepatic and Renal Metabolic Profiles and Gut Microbiome of Wistar Rats. *Nutrients* 2021, 13, 1865". *Nutrients*. 2022 Oct 19;14(20):4387. doi: 10.3390/nu14204387. PMID: 36297071; PMCID: PMC9611631.

(12) Kittirat Y, Suksawat M, Thongchot S, Padthaisong S, **Phetcharaburanin J**, Wangwiwatsin A, Klanrit P, Sangkhamanon S, Titapun A, Loilome W, Saya H, Namwat N. Interleukin-6-derived cancer-associated fibroblasts activate STAT3 pathway contributing to gemcitabine resistance in cholangiocarcinoma. *Front Pharmacol*. 2022 Aug 26;13:897368. doi: 10.3389/fphar.2022.897368. PMID: 36091805; PMCID: PMC9459012.

(13) Sitthirak S, Suksawat M, **Phetcharaburanin J**, Wangwiwatsin A, Klanrit P, Namwat N, Khuntikeo N, Titapun A, Jarearnrat A, Sangkhamanon S, Loilome W. Chemotherapeutic resistant cholangiocarcinoma displayed distinct intratumoral microbial composition and metabolic profiles. *PeerJ*. 2022 Aug 16;10:e13876. doi: 10.7717/peerj.13876. PMID: 35990899; PMCID: PMC9390323.

(14) Songserm P, Klanrit P, Klanrit P, **Phetcharaburanin J**, Thanonkeo P, Apiraksakorn J, Phomphrai K, Klanrit P. Antioxidant and Anticancer Potential of Bioactive Compounds from *Rhinacanthus nasutus* Cell Suspension Culture. *Plants (Basel)*. 2022 Jul 30;11(15):1994. doi: 10.3390/plants11151994. PMID: 35956472; PMCID: PMC9370634.

(15) Suksawat M, **Phetcharaburanin J**, Klanrit P, Namwat N, Khuntikeo N, Titapun A, Jarearnrat A, Vilayhong V, Sa-Ngiamwibool P, Techasen A, Wangwiwatsin A, Mahalapbutr P, Li JV, Loilome W. Metabolic Phenotyping Predicts Gemcitabine and Cisplatin Chemosensitivity in Patients With Cholangiocarcinoma. *Front Public*

Health. 2022 Feb 10;10:766023. doi: 10.3389/fpubh.2022.766023. PMID: 35223723; PMCID: PMC8866176.

(16) Smanthong N, Tavichakorntrakool R, Tippayawat P, Lulitanond A, Pinlaor P, Daduang J, Sae-Ung N, Chaveerach A, **Phetcharaburanin J**, Boonsiri P. Anti-*Proteus* Activity, Anti-Struvite Crystal, and Phytochemical Analysis of *Sida acuta* Burm. F. Ethanolic Leaf Extract. *Molecules*. 2022 Feb 6;27(3):1092. doi: 10.3390/molecules27031092. PMID: 35164357; PMCID: PMC8838957.

(17) Kittirat Y, **Phetcharaburanin J**, Promraksa B, Kulthawatsiri T, Wangwiwatsin A, Klanrit P, Sangkhamanon S, Jarearnrat A, Thongchot S, Mahalapbutr P, Loilome W, Saya H, Namwat N. Lipidomic Analyses Uncover Apoptotic and Inhibitory Effects of Pyrvinium Pamoate on Cholangiocarcinoma Cells via Mitochondrial Membrane Potential Dysfunction. *Front Public Health*. 2021 Dec 7;9:766455. doi: 10.3389/fpubh.2021.766455. PMID: 34950627; PMCID: PMC8688698.

(18) Ho PN, Klanrit P, Hanboonsong Y, Yordpratum U, Suksawat M, Kulthawatsiri T, Jirahiranpat A, Deewai S, Mackawan P, Sermswan RW, Namwat N, Loilome W, Khampitak T, Wangwiwatsin A, **Phetcharaburanin J**. Bacterial challenge-associated metabolic phenotypes in *Hermetia illucens* defining nutritional and functional benefits. *Sci Rep*. 2021 Dec 2;11(1):23316. doi: 10.1038/s41598-021-02752-8. PMID: 34857836; PMCID: PMC8639782.

(19) Anekthanakul K, Manochewa S, Chienwichai K, Pounsombat P, Limjiasahapong S, Wanichtharak K, Jariyasopit N, Mathema VB, Kuhakarn C, Reutrakul V, **Phetcharaburanin J**, Panya A, Phonsatta N, Visessanguan W, Pomyen Y, Sirivatanauksorn Y, Worawichawong S, Sathirapongsasuti N, Kitiyakara C, Khoomrung S. Predicting lupus membranous nephritis using reduced picolinic acid to tryptophan ratio as a urinary biomarker. *iScience*. 2021 Oct 25;24(11):103355. doi: 10.1016/j.isci.2021.103355. PMID: 34805802; PMCID: PMC8590081.

(20) Tomacha J, Dokduang H, Padthaisong S, Namwat N, Klanrit P, Phetcharaburanin J, Wangwiwatsin A, Khampitak T, Koonmee S, Titapun A, Jarearnrat A, Khuntikeo N, Loilome W. Targeting Fatty Acid Synthase Modulates Metabolic Pathways and Inhibits Cholangiocarcinoma Cell Progression. *Front Pharmacol*. 2021 Aug

4;12:696961. doi: 10.3389/fphar.2021.696961. PMID: 34421595; PMCID: PMC8371458.

(21) Padthaisong S, **Phetcharaburanin J**, Klanrit P, Li JV, Namwat N, Khuntikeo N, Titapun A, Jarearnrat A, Wangwiwatsin A, Mahalapbutr P, Loilome W. Integration of global metabolomics and lipidomics approaches reveals the molecular mechanisms and the potential biomarkers for postoperative recurrence in early-stage cholangiocarcinoma. *Cancer Metab.* 2021 Aug 4;9(1):30. doi: 10.1186/s40170-021-00266-5. PMID: 34348794; PMCID: PMC8335966.

(22) Senthong V, Kiatchoosakun S, Wongvipaporn C, **Phetcharaburanin J**, Tatsanavivat P, Sritara P, Phrommintikul A. Gut microbiota-generated metabolite, trimethylamine-N-oxide, and subclinical myocardial damage: a multicenter study from Thailand. *Sci Rep.* 2021 Jul 22;11(1):14963. doi: 10.1038/s41598-021-93803-7. PMID: 34294762; PMCID: PMC8298599.

(23) Haonon O, Liu Z, Dangtakot R, Intuyod K, Pinlaor P, Puapairoj A, Cha'on U, Sengthong C, Pongking T, Onsurathum S, Yingklang M, **Phetcharaburanin J**, Li JV, Pinlaor S. *Opisthorchis viverrini* Infection Induces Metabolic and Fecal Microbial Disturbances in Association with Liver and Kidney Pathologies in Hamsters. *J Proteome Res.* 2021 Aug 6;20(8):3940-3951. doi: 10.1021/acs.jproteome.1c00246. Epub 2021 Jul 16. PMID: 34270897.

(24) Nahok K, **Phetcharaburanin J**, Li JV, Silsirivanit A, Thanan R, Boonnate P, Joonhuathon J, Sharma A, Anutrakulchai S, Selmi C, Cha'on U. Monosodium Glutamate Induces Changes in Hepatic and Renal Metabolic Profiles and Gut Microbiome of Wistar Rats. *Nutrients.* 2021 May 30;13(6):1865. doi: 10.3390/nu13061865. PMID: 34070818; PMCID: PMC8229789.

(25) Promraksa B, Katrun P, **Phetcharaburanin J**, Kittirat Y, Namwat N, Techasen A, Li JV, Loilome W. Metabolic Changes of Cholangiocarcinoma Cells in Response to Coniferyl Alcohol Treatment. *Biomolecules.* 2021 Mar 22;11(3):476. doi: 10.3390/biom11030476. PMID: 33810184; PMCID: PMC8004792.

(26) Charoensin S, Laopaiboon B, Boonkum W, **Phetcharaburanin J**, Villareal MO, Isoda H, Duangjinda M. Thai Native Chicken as a Potential Functional Meat Source

Rich in Anserine, Anserine/Carnosine, and Antioxidant Substances. *Animals* (Basel). 2021 Mar 22;11(3):902. doi: 10.3390/ani11030902. PMID: 33809894; PMCID: PMC8004088.

(27) Thanee M, Dokduang H, Kittirat Y, **Phetcharaburanin J**, Klanrit P, Titapun A, Namwat N, Khuntikeo N, Wangwiwatsin A, Saya H, Loilome W. CD44 modulates metabolic pathways and altered ROS-mediated Akt signal promoting cholangiocarcinoma progression. *PLoS One*. 2021 Mar 29;16(3):e0245871. doi: 10.1371/journal.pone.0245871. PMID: 33780455; PMCID: PMC8007026.

(28) Taron W, Jamnongkan W, **Phetcharaburanin J**, Klanrit P, Namwat N, Techasen A, Sithithaworn P, Khuntikeo N, Boonmars T, Loilome W, Ngeontae W. A fluorescence AuNPs-LISA: A new approach for *Opisthorchis viverrini* (Ov) antigen detection with a simple fluorescent enhancement strategy by surfactant micelle in urine samples. *Spectrochim Acta A Mol Biomol Spectrosc*. 2021 Jun 5;254:119633. doi: 10.1016/j.saa.2021.119633. Epub 2021 Feb 26. PMID: 33744701.

(29) Thanee M, Padthaisong S, Suksawat M, Dokduang H, **Phetcharaburanin J**, Klanrit P, Titapun A, Namwat N, Wangwiwatsin A, Sa-Ngiamwibool P, Khuntikeo N, Saya H, Loilome W. Sulfasalazine modifies metabolic profiles and enhances cisplatin chemosensitivity on cholangiocarcinoma cells in in vitro and in vivo models. *Cancer Metab*. 2021 Mar 16;9(1):11. doi: 10.1186/s40170-021-00249-6. PMID: 33726850; PMCID: PMC7968252.

(30) Seyfried F, **Phetcharaburanin J**, Glymenaki M, Nordbeck A, Hankir M, Nicholson JK, Holmes E, Marchesi JR, Li JV. Roux-en-Y gastric bypass surgery in Zucker rats induces bacterial and systemic metabolic changes independent of caloric restriction-induced weight loss. *Gut Microbes*. 2021 Jan-Dec;13(1):1-20. doi: 10.1080/19490976.2021.1875108. PMID: 33535876; PMCID: PMC7872092.

(31) Prommajun P, **Phetcharaburanin J**, Namwat N, Klanrit P, Sa-Ngiamwibool P, Thanee M, Dokduang H, Kittirat Y, Li JV, Loilome W. Metabolic Profiling of Praziquantel-mediated Prevention of *Opisthorchis viverrini*-induced Cholangiocyte Transformation in the Hamster Model of Cholangiocarcinoma. *Cancer Genomics Proteomics*. 2021 Jan-Feb;18(1):29-42. doi: 10.21873/cgp.20239. PMID:

33419894; PMCID: PMC7796817.

(32) **Phetcharaburanin J**, Deewai S, Kulthawatsiri T, Moolpia K, Suksawat M, Promraksa B, Klanrit P, Namwat N, Loilome W, Poopasit K, Katekaew S, Phetcharaburanin P. ¹H NMR metabolic phenotyping of *Dipterocarpus alatus* as a novel tool for age and growth determination. *PLoS One*. 2020 Dec 15;15(12):e0243432. doi: 10.1371/journal.pone.0243432. PMID: 33320902; PMCID: PMC7737897.

(33) Liu Z, Coales I, Penney N, McDonald JAK, **Phetcharaburanin J**, Seyfried F, Li JV. A Subset of Roux-en-Y Gastric Bypass Bacterial Consortium Colonizes the Gut of Nonsurgical Rats without Inducing Host-Microbe Metabolic Changes. *mSystems*. 2020 Dec 8;5(6):e01047-20. doi: 10.1128/mSystems.01047-20. PMID: 33293406; PMCID: PMC8579838.

(34) Pakdeechote P, Meephat S, Sakonsinsiri C, **Phetcharaburanin J**, Bunbupha S, Maneesai P. *Syzygium gratum* Extract Alleviates Vascular Alterations in Hypertensive Rats. *Medicina (Kaunas)*. 2020 Sep 30;56(10):509. doi: 10.3390/medicina56100509. PMID: 33007813; PMCID: PMC7600592.

(35) Dokduang H, Jamnongkarn W, Promraksa B, Suksawat M, Padthaisong S, Thanee M, **Phetcharaburanin J**, Namwat N, Sangkhamanon S, Titapun A, Khuntikeo N, Klanrit P, Loilome W. In vitro and in vivo Anti-Tumor Effects of Pan-HER Inhibitor Varlitinib on Cholangiocarcinoma Cell Lines. *Drug Des Devel Ther*. 2020 Jun 11;14:2319-2334. doi: 10.2147/DDDT.S250061. PMID: 32606601; PMCID: PMC7296552.

(36) Padthaisong S, Thanee M, Namwat N, **Phetcharaburanin J**, Klanrit P, Khuntikeo N, Titapun A, Loilome W. A panel of protein kinase high expression is associated with postoperative recurrence in cholangiocarcinoma. *BMC Cancer*. 2020 Feb 24;20(1):154. doi: 10.1186/s12885-020-6655-4. PMID: 32093644; PMCID: PMC7041295.

(37) Padthaisong S, Thanee M, Namwat N, **Phetcharaburanin J**, Klanrit P, Khuntikeo N, Titapun A, Sangkhamanon S, Saya H, Loilome W. Overexpression of a panel of cancer stem cell markers enhances the predictive capability of the progression and recurrence in the early stage cholangiocarcinoma. *J Transl Med*. 2020 Feb

10;18(1):64. doi: 10.1186/s12967-020-02243-w. PMID: 32039729; PMCID: PMC7008521.

(38) Taron W, Jamnongkan W, Techasen A, **Phetcharaburanin J**, Namwat N, Sithithaworn P, Khuntikeo N, Mukdasai S, Sayasone S, Loilome W, Ngeontae W. AuNPs-LISA, an efficient detection assay for *Opisthorchis viverrini* (Ov) antigen in urine. *Talanta*. 2020 Mar 1;209:120592. doi: 10.1016/j.talanta.2019.120592. Epub 2019 Nov 27. PMID: 31892022.

(39) Nahok K, Li JV, **Phetcharaburanin J**, Abdul H, Wongkham C, Thanan R, Silsirivanit A, Anutrakulchai S, Selmi C, Cha'on U. Monosodium Glutamate (MSG) Renders Alkalinizing Properties and Its Urinary Metabolic Markers of MSG Consumption in Rats. *Biomolecules*. 2019 Sep 27;9(10):542. doi: 10.3390/biom9100542. PMID: 31569818; PMCID: PMC6843139.

(40) Suksawat M, Klanrit P, **Phetcharaburanin J**, Namwat N, Khuntikeo N, Titapun A, Jarearnrat A, Sa-Ngiamwibool P, Techasen A, Loilome W. In vitro and molecular chemosensitivity in human cholangiocarcinoma tissues. *PLoS One*. 2019 Sep 10;14(9):e0222140. doi: 10.1371/journal.pone.0222140. PMID: 31504065; PMCID: PMC6736243.

(41) Duangkumpha K, Stoll T, **Phetcharaburanin J**, Yongvanit P, Thanan R, Techasen A, Namwat N, Khuntikeo N, Chamadol N, Roytrakul S, Mulvenna J, Mohamed A, Shah AK, Hill MM, Loilome W. Urine proteomics study reveals potential biomarkers for the differential diagnosis of cholangiocarcinoma and periductal fibrosis. *PLoS One*. 2019 Aug 19;14(8):e0221024. doi: 10.1371/journal.pone.0221024. PMID: 31425520; PMCID: PMC6699711.

(42) Duangkumpha K, Stoll T, **Phetcharaburanin J**, Yongvanit P, Thanan R, Techasen A, Namwat N, Khuntikeo N, Chamadol N, Roytrakul S, Mulvenna J, Mohamed A, Shah AK, Hill MM, Loilome W. Discovery and Qualification of Serum Protein Biomarker Candidates for Cholangiocarcinoma Diagnosis. *J Proteome Res*. 2019 Sep 6;18(9):3305-3316. doi: 10.1021/acs.jproteome.9b00242. Epub 2019 Jul 31. PMID: 31310545.

(43) Promraksa B, **Phetcharaburanin J**, Namwat N, Techasen A, Boonsiri P, Loilome

W. Evaluation of anticancer potential of Thai medicinal herb extracts against cholangiocarcinoma cell lines. PLoS One. 2019 May 23;14(5):e0216721. doi: 10.1371/journal.pone.0216721. PMID: 31120926; PMCID: PMC6532846.

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