

IMSUT International Joint Usage/Research Center
International Project-completion Report (FY2022 ver.)

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	Watcharin Loilome
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	Yoshinori MURAKAMI
Project Title	Multi-omic analysis toward an understanding of therapeutic response for a precision medicine in cholangiocarcinoma
Duration	From 11/01/2019 to 3/31/2023 *Please enter the entire research period.
Project Members	
Name	Position, Institution
Watcharin Loilome	Associate.Prof,essor, Khon Kaen University, School of Medicine
Narong Khuntakeo	Associate.Prof,essor, Khon Kaen University, School of Medicine
Attapol Titapun	Surgeon, Khon Kaen University, School of Medicine
Hasaya Dokduang	Research Associate, Khon Kaen University, School of Medicine
Poramate Klanrit	Research Associate, Khon Kaen University, School of Medicine
Jutarop Petcharaburanin	Research Associate, Khon Kaen University, School of Medicine
Daisuke Matsubara	Tsukuba University, Graduate School of Medicine
Takeshi Ito	Assistant Professor, Institute of Medical Science, The University of Tokyo
Yutaka Kasai	Assistant Professor, Institute of Medical Science, The University of Tokyo
Motoi Oba	Research Associate, Institute of Medical Science, The University of Tokyo
Yoshinori Murakami	Professor, Institute of Medical Science, The University of Tokyo
Project-completion Report on achievements/progress through the entire project period	

In this collaboration, we have been challenging multi-omics and drug sensitivity analyses of patient-derived cholangiocarcinoma (CCA) tissues from Thailand and Japan by several new techniques in molecular pathology, including histo-culture drug response assay (HDRA), patient-derived xenografts (PDX), and patient-derived organoids (PDO). Extensive screening systems of Immunoglobulin superfamily molecules (IgSF), which was established in the IMSUT team, has been used to identify possible key molecules in invasion, metastasis, drug resistance and immunological responses between CCA cells and stromal cells, including vascular endothelial cells and immune cells. In this year, Khon Kaen University (KKU) team continued to generate HDRA, PDX and PDO in CCA by exchanging the information through E-mail and Zoom meeting, because IMSUT team could not accept visiting scientists from KKU due to COVID-19 pandemic. On the other hand, IMSUT team has shown causal involvement of an IgSF cell adhesion molecule in invasion of T-cell leukemia cells to the liver in mouse model and obtained similar findings in other cancer cells as well. Furthermore, IMSUT team identified several candidate IgSF molecules and the IgSF-IgSF interactions that are involved in the regulation of possible immune checkpoint in various cancers, including CCA. Possible involvement of IgSFs in immune checkpoint of CCA will be examined through collaboration of IMSUT and KKU teams in the next year.

Research Results from the Project during FY2022

<Publications>

No

<Patent Applications>

No

Days of visits to IMSUT during FY2022

*Please include visits without travel allowances.

*If the project members could not visit IMSUT due to the pandemic of COVID-19 during FY2022, please present how many days in total your project has held online meetings, discussions via e-mail or communication tools such as Slack, etc. among your project members since April 1st, 2022.

*For the "Sex" and "Age" sections, the information shall be used only for statistical purposes.

*Please select the age range based on the age at the end of FY2022.

Name	Position, Institution	Sex	Age	Visits to IMSUT (Days)
Watcharin Loilome	Assoc. Prof, KKU Schl. Med.	Female	40 or older	No visit
Narong Khuntakeo	Assoc. Prof, KKU Schl. Med.	Male	40 or older	No visit
Attapol Titapun	Surgeon, KKU Schl. Med.	Male	36 to 39	No visit
Hasaya Dokduang	Res. Assoc, KKU, Schl, Med.	Female	36 to 39	No visit
Poramate Klanrit	Res. Assoc, KKU, Schl, Med.	Male	36 to 39	No visit

Jutarop Petcharaburanin	Res. Assoc, KKU, Schl, Med.	Male	36 to 39	No visit
Name	Position, Institution	Sex	Age	Online Meetings (Days)
Watcharin Loilome	Assoc. Prof, KKU Schl. Med.	Female	40 or older	Once (1 day)
Narong Khuntakeo	Assoc. Prof, KKU Schl. Med.	Male	40 or older	No meeting
Attapol Titapun	Surgeon, KKU Schl. Med.	Male	36 to 39	No meeting
Hasaya Dokduang	Res. Assoc, KKU, Schl, Med.	Female	36 to 39	Once (1 day)
Poramate Klanrit	Res. Assoc, KKU, Schl, Med.	Male	36 to 39	No meeting
Jutarop Petcharaburanin	Res. Assoc, KKU, Schl, Med.	Male	36 to 39	No meeting
Name	Position, Institution	Sex	Age	Discussions via E-mail, Slack, etc. (Days)
Watcharin Loilome	Assoc. Prof, KKU Schl. Med.	Female	40 or older	30 times (12 Days)
Narong Khuntakeo	Assoc. Prof, KKU Schl. Med.	Male	40 or older	Once (1 Day)
Attapol Titapun	Surgeon, KKU Schl. Med.	Male	36 to 39	Twice (2 Days)
Hasaya Dokduang	Res. Assoc, KKU, Schl, Med.	Female	36 to 39	12 times (4 Days)
Poramate Klanrit	Res. Assoc, KKU, Schl, Med.	Male	36 to 39	1-2 times (1-2 Days)
Jutarop Petcharaburanin	Res. Assoc, KKU, Schl, Med.	Male	36 to 39	1-2 times (1-2 Days)

Usage of Facilities/Equipment during FY2022

*Please enter '0' or 'N/A' if you have not used any facilities.

*For this fiscal year only, if the project members could not visit IMSUT due to the pandemic of COVID-19, please include the uses by IMSUT faculty members to conduct this joint research project.

Name of Facility	Equipment	Number of Use (Times)	Usage time (Hours)
FACS Core Laboratory	e.g.) FACS Aria (BD)	12	12
Medical Proteomics Laboratory	e.g.) Orbitrap QSTAR Elite	0	0
Imaging Core Laboratory	e.g.) Zeiss Multiphoton Microscopy (LSM710NLO)	0	0

Gene Manipulated Mouse Section	Creation and cryopreservation embryo of Knockout mouse	0	0
Human Genome Center	Supercomputer	0	0
Amami Laboratory of Injurious Animals	Experimental lab	0	0
Other			
Other	Experimental Animal Facility	12	72
Other	Pathological Analysis	8	24
Usage of Scientific Resources *Please enter '0' or 'N/A' if you have not used any.			
Name of Scientific Resource			Number of Samples/Lines
Serum (BioBank Japan)			0
DNA (BioBank Japan)			0
Knockout mouse			2
Pathogenic bacteria			0
Other			0
Usage of Database *Please enter '0' or 'N/A' if you have not used any.			
Name of Database			Number of Use (Times)
			0
			0