

JAPAN DENTAL ASSOCIATION
THE FELLOWSHIP OF THE INTERNATIONAL SCIENTIFIC EXCHANGE FUND
RESEARCH ACCOMPLISHMENT REPORT

Name of Recipient: Li Li-Jie	Period of Fellowship: 2024/04/01 ~ 2025/03/31
Research Subject: Spatial transcriptomics unveiling a novel biomarker to distinguish pre-malignant and early cancer among 4NQO-induced oral carcinogenesis model	
Host Institution in Japan: Osaka University, Graduate School of Dentistry	Host Supervisor in Japan: Professor Toyosawa Satoru
Accomplishments during your stay in Japan: (If this space is not enough, please attach a report) <p>During my research, I identified VEGFR2 (Vascular endothelial growth factor receptor 2) expression in oral cancer cell as a key biomarker in oral cancer progression, highlighting its potential as a therapeutic target. VEGFR2 is known for promoting angiogenesis, but my study revealed its expression in cancer cell with potential role in oral squamous cell carcinoma (OSCC) progression, proliferation, and metastasis. Using a carcinogen-induced OSCC mouse model, I observed increasing VEGFR2 and VEGFA (its ligand) levels with tumor progression. Notably, nuclear VEGFR2 expression was significantly higher in aggressive tumors. In human OSCC cells, VEGFA stimulation increased VEGFR2 levels in both the cytoplasm and nucleus, enhancing tumor growth. However, VEGFR2 inhibition effectively blocked these effects. Clinical analysis further confirmed that nuclear VEGFR2 was elevated in advanced OSCC stages (T3-4) and correlated with metastasis and tumor proliferation. These findings suggest that nuclear VEGFR2 plays a crucial role in OSCC progression and prognosis. Examining its expression could serve as a valuable prognostic marker, and targeting nuclear VEGFR2 represents a promising therapeutic approach beyond anti-angiogenesis.</p> <p>Additionally, I participated in several annual conferences in Japan, where I presented and discussed my research findings. I was honored to receive the Outstanding Poster Award. These experiences provided valuable feedback on my work and allowed me to explore diverse research perspectives, which greatly enriched my knowledge.</p>	
Publications: 1. The Impact of High Phosphate Concentration on Osteoblastic Differentiation using 3D Cell Culture System. <u>Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology</u> . 2024;37(3):552-557. doi: 10.1016/j.ajoms.2024.12.003.	
Presentations at Academic Meetings: 1. 2024/07/31 The 35th Annual Meeting of the Japanese Society of Oral Pathology / Outstanding Poster Award (第 35 回日本臨床口腔病理学会総会 (新潟) ポスター発表 / 優秀ポスター賞) 2. 2024/11/2 The 66th Annual Meeting of the Japanese Association for Oral Biology (第 66 回歯科基礎医学会学術大会 (長崎) ポスター発表)	
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Signature of Applicant: LI, LI-JIE Date: 2025/3/29

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RESEARCH ACCOMPLISHMENT REPORT

Name of Recipient: Agatha Ravi Vidiaratri	Period of Fellowship: January 2025 to March 2025
Research Subject: Epidemiological study on the association between oral health/function and well-being in older adults in Japan	
Host Institution in Japan: Hokkaido University	Host Supervisor in Japan: Masanori Iwasaki
Accomplishments during your stay in Japan: (If this space is not enough, please attach a report) <i>The report is attached below</i>	
Publications: In progress (full length manuscript will be submitted at the beginning of next fiscal year: 2025)	
Presentations at Academic Meetings: n/a	
Contact Address after the Period of this fellowship: Department of Preventive and Community Dentistry Faculty of Dentistry, Universitas Gadjah Mada Jl.Denta 1, Sekip Utara, Yogyakarta 55281 Indonesia (+62 8111615195)	
E-mail Address: Work email: [REDACTED] Personal email: [REDACTED]	

Signature of Applicant: _____



Date: 3 March 2025

Accomplishments during my stay in Japan

During my stay in Japan, I had the invaluable opportunity to engage in various academic, research, and observational activities that deepened my understanding of geriatric oral health, dental education, and public health research methodologies. Through hands-on training, discussions with experts, and participation in research projects, I was able to enhance my research skills, clinical knowledge, and academic collaborations. My key accomplishments include:

1. Geriatric Oral Function Assessment and Research Training

One of the most significant aspects of my time in Japan was my engagement in geriatric oral function assessment to evaluate oral frailty and oral hypofunction. Through this experience, I gained hands-on training in evaluating oral function, which provided me with practical insights into clinical methodologies used in Japan. Additionally, I strengthened my research expertise by exploring fundamental concepts in geriatric dentistry, reviewing previous studies in dental public health, and refining my skills in data cleaning, statistical analysis, and academic manuscript preparation under the supervision and guidance of Professor Masanori Iwasaki.

2. Observation and Training in Dental Education and Clinical Practice

A key component of my academic experience was observing dental education at Hokkaido University. I attended preventive dentistry classes and skills labs of Misuzu Sato Sensei and Takafumi Yamamoto Sensei's classes. This exposure allowed me to compare different teaching approaches in dental education and understand the structured learning environment provided to students in Japan. Moreover, I had the privilege of witnessing dental treatments for children with disabilities at the university hospital, led by Professor Yawaka Yasutaka from the Dentistry for Children and Disabled Person Department. Observing these treatments gave me a greater understanding of specialized dental care, the challenge, the approach for children with special needs, and the multidisciplinary approach required to ensure effective treatment outcomes.

3. Discussion on Geriatric Oral Health

My visit to the Tokyo Metropolitan Institute for Geriatrics and Gerontology (TMIG) was another invaluable experience. Under the guidance of Dr. Hirano, Research Director of TMIG and President of the Japanese Society of Gerodontology, I had the opportunity to participate in discussions on geriatric oral health and observe the follow-up data collection process for a national longitudinal aging research project. This study focused on various aspects of aging, including cognitive function, physical health, nutrition, and oral frailty. Engaging with Dr. Hiroyuki Sasai, the project's Principal Investigator, provided

key insights into effective data coordination. I gained valuable insights into the meticulous methods used in large-scale health research, the importance of workflow optimization, and strategies to minimize missing data in health surveys. This exposure was instrumental in helping me understand the complexities of aging research and the intersection between oral and systemic health.

4. Scientific Writing and Peer Review Engagement

Beyond hands-on training and observations, I am actively involved in academic writing and currently working on peer review processes. One of my key projects involved working on a scientific research paper exploring the association between oral health/function and well-being in older adults in Japan. This research is highly relevant to public health and geriatric dentistry, as it highlights the role of oral health in maintaining overall health and quality of life in aging populations. Additionally, I had the opportunity to participate in peer review activities under the mentorship of Associate Professor Takafumi Yamamoto Sensei. Engaging in the peer review process helped me develop critical evaluation skills, enhance my academic writing abilities, and gain a deeper understanding of scientific publication standards.

5. Connecting with Experts in Preventive Dentistry at Niigata University

I will have the invaluable opportunity to connect with renowned researchers and senior Sensei in preventive dentistry, who have collaborated with Universitas Gadjah Mada for years through research partnerships and PhD supervision for scholars from my home institution.