NGOC BAO TO

+82 (2) 2220-2428 | tobaongoc@hanyang.ac.kr / tobaongoc.hcmus@gmail.com | Hanyang University, Seoul, Korea

WORK EXPERIENCE

Sep 2021 - Present

Research assistant

Bioinformatics & Genomics Laboratory, Hanyang University (Seoul, South Korea)

Projects Undertaken:

1. Investigate the role and molecular mechanisms of TXNIP in cervical cancer development and progression.
2. Comprehensive analysis of the distinct biological effects exerted by each isoform of snoRNA SNHG16 on the cellular behaviour of human colon cancer cell lines.
3. Identification and functional characterization of bifunctional genes through large-scale single-molecule RNA sequencing and analysis.

Mar 2019 - Aug 2021

Research assistant

Functional Genomic Biochemistry Laboratory, Jeju National University (Jeju, Korea)

Projects Undertaken:

1. Pentadecanoic acid-mediated suppression of stemness in MCF-7/SC breast cancer stem-like cells.
2. Overcoming Tamoxifen resistance in breast cancer stem-like cells through Oestrogen-receptor alpha modulation by Pentadecanoic acid.
3. Development of Odd-Chain fatty acids as novel Histone Deacetylase 6 (HDAC6) inhibitors for cancer therapy.
4. Metabolic and Lipidomic characterization of radio-resistant MDA-MB-231 breast cancer cells for therapeutic target discovery.
5. Investigating AMPK as a metabolic regulator and therapeutic target in breast cancer stem cells.

Feb 2017 - March 2017

Experimental Course in Biotechnology in Medicine

Faculty of Medicine, University of Tsukuba (Japan)

- Workshop on Infection Diagnosis: Laboratory course for diagnosing bacterial pathogenic species.
- Identification and characterization of pathogenic bacteria from patient samples.

Aug 2015 - Jul 2017

Research student

Stem Cell Institute, Vietnam National University HCMC - University of Science (Vietnam)

- Screening of Natural Compounds with Anticancer Activity Against Breast and Liver Cancer Cells.
- Exploration of Dendritic Cell-Based Immunotherapy for Cancer Treatment.
- Development and Validation of In Vitro and In Vivo Cancer Models for Preclinical Research.

EDUCATION

Sep 2023 - Present

Ph.D. of Science in Graduate Program – Department of Life Science

Hanyang University (Seoul, Korea)

- GPA: 4.35/4.5 (Currently)
- **Supervisor**: Prof. Jin-Wu Nam
- Main project: "Identification and functional characterization of bifunctional genes through large-scale single-molecule RNA sequencing and analysis."

Mar 2019 - Feb 2021 **Master of Science in Interdisciplinary Graduate Program - Advanced Convergence Technology and Science**

Jeju National University (Jeju, Korea)

- GPA: 4.5/4.5
- **Supervisor**: Prof. Somi Kim Cho
- Thesis title: "Pentadecanoic acid as a novel anti-cancer agent in human breast cancer stem-like MCF-7/SC cells"

Sep 2013 - Oct 2017 **Bachelor of Science in Biotechnology**

Vietnam National University – Ho Chi Minh City (VNU-HCM) University of Science (Vietnam)

- GPA: 3.00/4.00
- **Supervisor**: Dr. Sinh Truong Nguyen (Stem Cell Institute, Vietnam National University HCMC - University of Science)
- Thesis title: "Development of three-dimensional cell model using human hepatocellular carcinoma (HepG2) cell line by hanging-drop technique."

PERSONAL SKILLS

Language(s)

- English
- Vietnamese

Job-related skills

Professional skills:

- Molecular biology: Western blot, Co-immunoprecipitation, Specific gene silencing with siRNA, RNA extraction, Real-time polymerase chain reaction, Polymerase chain reaction.
- Cell biology: Cell culture, Flow cytometry analysis, Reactive oxygen species measurement, Invasion assay, Wound healing assay, Glutathione measurement, Aldehyde dehydrogenase activity measurement, Hoechst staining, Propidium iodide staining, Cell viability assay, Karyotype, Lipid droplet staining.
- Animal experiments: Orthotopic injection of cancer cells into BALB/C nude mice.
- Data analysis: Prism, Calcusyn, Image J, Xeno browser, Kaplan-Meier, Compusyn.

ADDITIONAL INFORMATION

Honours and awards

- International student scholarship for excellence in Science and Engineering (2023-Present)
- Brain Korean scholarship for international graduate students who are studying in Korea (2019-2021).
- Eureka award - Best scientific research award for Vietnamese students (2017).
- Scholarship for fabulous students from Phu Yen province who are studying in Ho Chi Minh City, Vietnam (2015 & 2017).
- Scholarship for excellent undergraduate students from Alumni of Biotechnology Faculty, University of Science, Ho Chi Minh City (2014).
- VietSeeds Foundation scholarship for excellent undergraduate students (2013-2017).

Publications

- Lee, K. T., Pranoto, I. K., Kim, S. Y., Choi, H. J., **Ngoc B T.**, Chae, H., ... & Nam, J. W. (2024). Comparative interactome analysis of α-arrestin families in human and Drosophila. *Elife*, *12*, RP88328.
- Y Thi-Kim Nguyen[†]., **Ngoc B T[†]**., Truong, V. N. P., Kim, H. Y., Ediriweera, M. K., Lim, Y., & Cho, S. K. (2022). Impairment of glucose metabolism and suppression of stemness in MCF-7/SC human breast cancer stem cells by nootkatone. *Pharmaceutics*, *14*(5), 906.
- **Ngoc B T.**, Truong, V. N. P., Ediriweera, M. K., & Cho, S. K. (2022). Effects of combined pentadecanoic acid and tamoxifen treatment on tamoxifen resistance in MCF– 7/SC breast cancer cells. *International journal of molecular sciences*, *23*(19), 11340.
- Lee, H[†]., **Ngoc B T[†]**., Kim, M., Nguyen, Y. T. K., Cho, S. K., & Choi, H. K. (2022). Metabolic and lipidomic

characterization of radioresistant MDA-MB-231 human breast cancer cells to investigate potential therapeutic targets. *Journal of Pharmaceutical and Biomedical Analysis*, *208*, 114449.

- Meran K E[†], **Ngoc B T[†],** Y Lim, & SK Cho (2021). Odd-Chain Fatty Acids as Novel Histone Deacetylase 6 (HDAC6) Inhibitors. *Biochimie***,** 186, 147-156.
- **Ngoc B T[†],** Y Thi-Kim Nguyen[†], JY Moon, Meran K E, SK Cho. (2020). Pentadecanoic Acid, an Odd-Chain Fatty Acid, Suppresses the Stemness of MCF-7/SC Human Breast Cancer Stem-Like Cells through JAK2/STAT3 Signaling. *Nutrients* 12 (6):1663
- Sinh T N, Nghia M D, Duyen H-K T, **Ngoc B T**, Phuc H V, Mai T T N & Phuc Van Pham. (2020). Isopanduratin A Isolated from Boesenbergia pandurata Reduces HepG2 Hepatocellular Carcinoma Cell Proliferation in Both Monolayer and Three-Dimensional Cultures. *In Cancer Biology and Advances in Treatment* (pp. 131-143).

REFERENCES

Professor. Nam Jin-Wu
Hanyang Institute of Bioscience and Biotechnology (HY-IBB - Deputy Director,)
College of Applied Life Sciences
Hanyang University
Email: jwnam@hanyang.ac.kr

Dr. Moon Jeong Yong
Laboratory of Functional Biochemistry
College of Applied Life Sciences
Jeju National University
Email: englandowen@hanmail.net