

Clarisse Ratu Diandra

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I am a challenge-driven researcher with a solid foundation in molecular biology, protein biochemistry, and structural biology. My research focus is on exploring molecular mechanisms involved in immune responses, cancer, protein homeostasis, and developing tools with real-world diagnostic and therapeutic applications. I thrive in both independent and collaborative settings that value scientific integrity, innovation, and impact-driven research.

EDUCATION & AWARDS

Biochemistry MBiol, BSc

University of Leeds, UK

September 2020 - July 2024
Molecular Biology | Advanced Biomolecular Techniques | Biophysical Characterisations

- Classification: High Upper Second-Class Honours (67.9%)
- Dean's List Award (top 5% of students): 2021, 2022
- Dean's Excellence Scholarship (exemplary academic performance): 2020, 2021, 2022

A-levels

Surabaya Cambridge School, Indonesia

July 2018 - June 2020
Mathematics | Physics | Biology | Chemistry

- A*A*AA

RESEARCH EXPERIENCE

Characterising Highly Disordered but Conserved Regions of Ire1 Luminal Domain C-terminal for Oligomerisation

University of Leeds, UK

October 2023 - May 2024

- Refined DNA expression of 9 Ire1 luminal domain variants in bacterial cell cultures, performed purification using the QIAprep Spin Miniprep Kit, and conducted sequencing analysis in Benchling software.
- Optimised protein expression in bacterial cell cultures and IMAC purification of 9 Ire1 luminal domain protein variants.
- Utilised Mass Photometry, FIDA, and Nuclear Magnetic Resonance for biophysical characterisation of Ire1 luminal domain wild-type and mutant variants to observe conformational and structural changes in response to its ligands.
- Designed and optimised experimental protocols to improve reproducibility and streamline parallel experiments.

Investigating HIV-1 Nef Hijacking of Cell Machinery for Pathogenesis

University of Leeds, UK

October 2022 - March 2023

- Characterised the role of HIV-1 Nef protein in CD4 downregulation and Hck-SH3 interactions, highlighting treatment potential.
- Utilised Surface Plasmon Resonance and Nuclear Magnetic Resonance to study mutant Nef and Hck-SH3 protein-protein interactions.
- Applied Confocal Microscopy and Flow Cytometry to investigate the subcellular localisation of mutant Nef proteins and CD4 quantification in infected HeLa cells.

GFP Gene Expression and EGFP Protein Purification

University of Leeds, UK

October 2021 - November 2021

- Genetically modified *E. coli* (DH5 α) cells by ligating pET28c expression vector with GFP DNA to express the GFP gene.
- Performed western blot analysis on purified EGFP protein expression to assess protein quality.

REVIEWS

The Development and Prospects of Immunotherapy in Cancer Treatment

November 2024 - December 2024

- Examined the development of cancer immunotherapy advancements that influence current standard medical practice.
- Evaluated potential Cancer Immunotherapies, involving ICI, tumour vaccines, CAR-T cells and BiTE® antibodies

Unfolding Protein Response (UPR): A Promising Therapy to Breast Cancer

October 2022 - May 2023

- Studied UPR influences in breast cancers: tumorigenesis, angiogenesis, migration, chemoresistance, and dormancy.
- Discussed molecular key factors influencing UPR-targeting drugs for single and combination breast cancer therapy.

WORK EXPERIENCE

FBS Student Engagement Intern: International Position

University of Leeds, UK

August 2023 - July 2024

- Coordinated and led student-driven events for 200+ participants to foster community engagement.
- Collaborated with student support services to promote inclusivity and ensure a welcoming environment.
- Elevated year-to-year event participation by 30% through strategic planning and feedback-driven improvements.

SKILLS

Protein Expression & Purification (Liquid Chromatography & FPLC) | Protein Characterisation Techniques (Nuclear Magnetic Resonance, Mass Photometry, Surface Plasmon Resonance, Flow-Induced Dispersion Analysis) | Plasmid Expression & Purification | Molecular Biology Techniques (PCR, SDS-PAGE, Western Blot, Molecular Cloning, DNA Sequencing) | Cellular Imaging Techniques (Confocal Microscopy, Flow Cytometry) | Bioinformatics | Data Analysis & Visualisation (OriginLab, Fiji, PyMOL, Microsoft Excel, RStudio) | Good Laboratory Practice (GLP) | Benchling | Detailed Record Keeping | Project Design | Troubleshooting & Optimisation | Root-Cause Analyses | Solution-Oriented Approach | Literature Research | Scientific Communication (Posters, Presentation, Writing) | Interdisciplinary Collaboration |

CERTIFICATES

[Imperial College London: Immunology - Immune Failures and Cancer Immunology Course](#)

March 2025

- Studied genetic regulation, immune system failures, and therapeutic approaches.
- Evaluated current immune therapies and identified immune mechanisms in disease pathogenesis.

[LifeArc Life Sciences: Biology Research Job Simulation](#)

October 2024

- Optimised experimental conditions of the fibroblast-to-sensory differentiation protocol.
- Analysed experimental results using RStudio software and logistic regression.

LANGUAGES

English *full professional proficiency*, Bahasa Indonesia *native*, Javanese *native*

INTERESTS

Scientific Research | Nutrition & Health | Forensic Science & Crime Investigation | 2D Art