

# Clarisse Ratu Diandra

[clarisse14diandra@gmail.com](mailto:clarisse14diandra@gmail.com) | [LinkedIn](#) | [Portfolio](#)

I am a challenge-driven researcher with a solid foundation in molecular biology, protein biochemistry, and structural biology. My interests focus on exploring molecular mechanisms involved in immune responses and 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

September 2020 - July 2024

University of Leeds, UK

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

July 2018 - June 2020

Surabaya Cambridge School, Indonesia

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 $\alpha$ ) 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 (Flow-Induced Dispersion Analysis (FIDA), Mass Photometry, Nuclear Magnetic Resonance, Surface Plasmon Resonance) | 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) | Benchling | Good Laboratory Practice (GLP) | Detailed Record Keeping | Troubleshooting & Optimisation | Root-Cause Analyses | Project Design | 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