# Clarisse Ratu Diandra

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I am a challenge-driven researcher with a strong foundation in molecular biology and protein biochemistry. I am passionate about research focused on protein homeostasis, protein–protein interactions, and structural biology, to advance our understanding and treatment of human diseases. I enjoy working on complex problems and delivering innovative solutions. I thrive in both independent and collaborative environments that value translational research and scientific integrity.

## 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.

## 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.
- Highlight the role of protein degradation pathways, including ER-associated degradation (ERAD), autophagy, and proteasomal degradation in inducing cancer cell death and restoring protein homeostasis.
- 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 (Mass Photometry, Flow-Induced Dispersion Analysis (FIDA), 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 & Statistical Analysis | Origin Lab | Fiji | Benchling | Detailed Record Keeping | PyMOL | Good Laboratory Practice (GLP) | Troubleshooting & Optimisation | Root-Cause Analyses | Project Design | Unfolding Protein Response | Interdisciplinary Collaboration | Scientific Communication (Posters, Presentations, and Writings) |

## CERTIFICATES

**University of Michigan: Anatomy - Cardiovascular, Respiratory, and Urinary systems** May 2025

- Studied the structures and functions of the cardiovascular, respiratory, and urinary systems.

**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 Translational Research | Forensic Science & Crime Investigation | 2D Art