

# GINNA AL-ZUBAIDI

+447375501838 | ginnaalzubaidi@icloud.com

## SUMMARY

---

As an aspiring geneticist, I am keen to apply for the Laboratory Assistant role as it provides a unique opportunity to engage with the essential, yet often overlooked, aspects of lab work that university courses rarely highlight. Tasks like pouring plates are foundational to smooth-running laboratories and provide a true glimpse into the realities of working within one. During my placement year, I have been formally assessed in key techniques, such as DNA extraction and PCR, enabling me to work carefully and independently to produce results of a high quality. In maintaining the lab to accreditation standards, I have learned the value of these fundamental skills and how they underpin more advanced research. Following my undergraduate, I aim to pursue a PhD within computational biology, and I believe that this role will provide the practical laboratory experience and skills essential for navigating the complexities of interdisciplinary research.

## EXPERIENCE

---

### DNA Analysis @ King's Forensics

Waterloo, London

Lab Assistant – Placement Year

Aug 2024 – Present

- Processed buccal swab samples by booking and tracking them via Excel, ensuring accuracy and compliance throughout workflow.
- Performed DNA extraction using Chelex bead technology and prepared high-quality samples for forensic analysis.
- For non-buccal swab samples, such as DNA from objects of deceased persons, blood or other stain cards, meticulous extraction was performed using the column method.
- Conducted PCR amplification using industry-standard kits (e.g. NIST, HDPLEX, Fusion) to ensure reliable genetic analysis results.
- Prepared, operated, and maintained capillary electrophoresis systems for DNA fragment separation, often abiding by a deadline.
- Maintained the lab, including cleaning, replacing and ordering necessary equipment regularly.
- Complied with SOPs and H&S standards to fulfil UKAS ISO accreditation.

### Module: Human and Molecular Genetics B

- This practical aimed to mutate the ADE2 gene in the *Saccharomyces cerevisiae* strain BY4741 using CRISPR-Cas9, transforming it into an ADE2 mutant strain.
- Conducted CRISPR-Cas9 mediated gene editing in yeast.
- Extracted yeast genomic DNA from ADE2 mutant strains to verify the gene editing process.
- Amplified the mutated region using PCR, followed by purification of the PCR fragment.
- Sent the purified PCR product for DNA sequencing to confirm the creation of the desired DNA sequence.

### Module: Molecular Biology Research Skills

- The practical's objective was to construct the recombinant plasmid pUCHISGH and enable the expression of Somatotropin in *E. coli* upon IPTG induction. Over five days, students gained hands-on experience and theoretical knowledge in various genetic engineering techniques.
- Conducted agarose gel electrophoresis for DNA analysis and SDS-PAGE for protein analysis, crucial for assessing the integrity and size of DNA and proteins.
- Employed PCR to generate plasmid and insert fragments, followed by Gibson assembly for plasmid construction, showcasing skills in modern cloning techniques.
- Induced expression of 6xHis-tagged Somatotropin in *E. coli* with plasmid pUCHISGH using IPTG, gaining experience in protein expression system.

### Genetic Engineering Using CRISPR/Cas9

Aarhus, Denmark

Summer Exchange Program

Aug 2023 – Sep 2023

- Discussed extensively, CRISPR/Cas9 delivery methods including viral and chemical/physical, as well as important factors to consider, HDR in generating knockouts and analysed its efficiency as well as alternatives such as SaCas9 for easier AAV-based CRISPR delivery.
- Led a group project where the aim was to persuade stakeholders that our gene therapy for an assigned disease, Duchenne Muscular dystrophy, was the most promising. This included designing the potential CRISPR therapy, discussing feasibility and delivery methods.

## EDUCATION

---

### King's College London

London, UK

• Bsc Biomedical Science

Sep 2022 – Jun 2026

Year 2 modules include: Molecular Research skills (86%), Human and Molecular Genetics A (72%), Human and Molecular Genetics B (66%), Introduction to Programming for Bioscientists (74%), Introduction to bioinformatics (77%), Molecular Basis of Gene Expression, Cell Biology, Immunology.

## SKILLS & INTERESTS

---

**Skills:** Python, DNA Extraction, DNA purification, PCR, Capillary Electrophoresis, Gel electrophoresis, microscopy, data analysis

**Societies:** Writer and Editor for ScienceMind, Biotechnology and Synthetic Society, Biochemistry Society, GKT Netball Society