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# Work Experience

### **10/2022 – Present** **Matthias Schleiden Institute Jena, Germany**

**Master Thesis**

* Characterization of the SRS\_13901 Effector Protein in Sporisorium reilianum f.sp. reilianum. It involves validating the virulence gene through knockout studies and creating complementation strains with distinct tag versions for advanced analysis.
* To elucidate the interaction partners of the SRS\_13901 protein via the application of yeast two-hybrid technique, to provide innovative insights into the pivotal role of SRS\_13901 in the pathogenicity of biotrophic smut fungus.
* Enzyme-based assays for functional evaluation of signal peptide.

# Education

### **10/2021- Present** **Master of Science in Molecular Life Sciences**

**Friedrich Schiller University, Jena, Germany**

* Molecular Development Biology, Molecular genetics,

Molecular cell biology

* Tumor biology, bioinformatics, epigenomics, functional genomics, molecular evolution, virology, molecular immunogenetics, gene regulatory network, system biology.

### **08/2018 – 04/2021** **Delhi University, India**

### **Bachelor of Science in Zoology Honors**

* Genetics, Immunology
* Cell and development biology
* Proteins and enzymes
* Physiology
* Molecular biology
* Biochemistry

# Projects

1. **Developmental control genes (CRISPR)**

Friedrich Schiller University, Jena, Germany.

* Knockout of AGAMOUS gene in Arabidopsis thaliana using CRISPR-Cas9 to observe phenotypic and genotypic expressions associated with the gene.

1. **Function of The Wilms tumor suppressor gene Wt1a**

Friedrich Schiller University, Jena, Germany.

* Detection of a 5-base pair mutation within exon 1 of the WT1 gene in Zebrafish larvae (specifically, the 3-day-old post-fertilization [dpf] wt1a ex1\_del5 variant) utilizing the High-Resolution Melt Analysis (HRMA) genotyping technique
* Employing PTU treatment for embryo transparency, expertly sorting and embedding larvae in agarose for intricate brain ventricular injections and advancing research through three-dimensional visualization with light sheet microscopy.

1. **Genetic Manipulation and Functional Characterization of** **Virulence Gene**

Matthias Schleiden Institute Jena, Germany

* Knockout confirmation in Sporisorium reilianum f.sp. reilianum through southern blot.
* Assessing eukaryotic signal peptide functionality via yeast secretion trap assay.

# Skills and Competence

**Laboratory Skills**

* DNA, RNA, and protein extractions, DNA, and plasmid isolation, cloning techniques (Gibson assembly, Restriction enzyme-based, PCR cloning), SDS-PAGE, Cell Culture, PCR (RT-qPCR, qPCR), agarose gel electrophoresis, Vector preparation, Southern and Western Blots, Transformation and Transfection, CRISPR/cas9, vitality assays, work in S1 & S2 areas.
* Bioinformatics tools, Antigen-Antibody interactions, ELISA, FACS, Thin layer chromatography, Column chromatography, Microscopy techniques, next-generation sequencing, Sanger sequencing, and data analyses.
* Proficient in laboratory safety protocols and data analysis

## Language

|  |  |
| --- | --- |
| German | Basic (A2) |
| English | Business Fluent |

**Software / Tools**

|  |  |
| --- | --- |
| Microsoft Office | Word, Excel, PowerPoint |
| Method-specific software | Clone manager, NEB builder |

**Soft skills**

* Strong communication and collaboration skills.
* Project management and organization
* Documentation and reporting
* Presentation skills

Hobbies

* Learning new skills.
* Playing badminton.
* Researching molecular techniques