



Research Theme:
Research Project Title: Identification of the molecular mechanism of long hair phenotype in triple transgenic mice
Principal Investigator/Supervisor: Thirumaran s/o Thanabalu
Co-supervisor/ Collaborator(s) (if any): Woo Wei Meng
Project Description <p>N-WASP regulates actin cytoskeleton which is responsible for many cellular process such as cell-cell adhesion and cell proliferation. Conditional knockout of N-WASP in the skin caused Alopecia. In order to study the role of N-WASP in skin cancer we a generated a triple transgenic mice and these mice were found to have very long hair before N-WASP knockout. Administration of tamoxifen caused N-WASP knockout and alopecia. Alopecia in N-WASP knockout mice has been suggested to be due to inactivation of Wnt signaling pathway or the activation of Tgfβ pathway. We propose to generate mice expressing Yellow Fluorescent Protein (YFP) in the skin of the triple transgenic mice and isolate YFP positive cells from both control and triple transgenic mice using FACS. Total RNA isolated from the YFP positive cells (triple transgenic mice and control mice) will be used to carry out RNAseq. The RNAseq data will be analyzed using pathway analysis software to identify putative signaling pathways which are responsible for the long hair phenotype. The identity of the pathways responsible will be verified using chemical inhibitors and activators of the putative pathways. The inhibitors of the putative pathways will be applied on long hair mice to restore the hair to normal length while the activators of putative signaling pathways will be tested on normal mice to induce long hair phenotype.</p>
Supervisor contact: If you have questions regarding this project, please email the Principal Investigator - <u>Thirumaran@ntu.edu.sg</u>
For more information and application, please visit: <u>http://igs.ntu.edu.sg/Scholarships/Pages/SkinRSS.aspx</u>