



**NATIONAL INSTITUTE OF MENTAL HEALTH & NEURO
SCIENCES (NIMHANS), BANGALORE – 560029, INDIA.**

Institute of National Importance

TO WHOM IT MAY CONCERN

Mr Soham Jagtap had joined the lab under Biotechnology Industry Research Assistance Council (BIRAC) funded project “Generation of induced pluripotent stem cells and midbrain floor plate cells from Indian ethnicity Parkinson’s disease patients”. He has also secured the Senior Research Fellowship from the Indian Council of Medical Research for his Ph.D. work, and registered for Ph.D. in 2018.

He has gained hands-on experience on induced pluripotent stem cell (iPSC) culture and has authored publications in Stem Cell Research Journal. The project involved isolation of peripheral blood mononuclear cells (PBMCs) from Parkinson’s disease (PD) patients and healthy controls. The PBMCs were further reprogrammed into Induced Pluripotent Stem Cells (iPSC) which were further characterized for expression of pluripotency and self renewal markers by flow cytometry, PCR and immunofluorescence. Tri-lineage differentiation of the iPSC lines was confirmed by spontaneous differentiation of these lines into endoderm, ectoderm and mesoderm lineages by PCR and immunofluorescence. The iPSC lines were further differentiated into Neural Progenitor (NP) cells which were further enriched with magnetic sorting for PSA-NCAM, a marker for isolating neuronal lineage restricted progenitor cells. The enriched NPs from the PD as well as control NPs were further subjected to differentiation into the target cell type for PD i.e. dopaminergic neurons. The neurons were assessed for vesicular dopamine release, neurite outgrowth, axon degeneration index and synapse density. During the course of the project, we found out that one of the PD iPSC lines harbours the I1371V mutation in the GTPase domain of LRRK2 enzyme. Mutation in LRRK2 contribute to a significant number of familial as well as sporadic PD cases. The mutations in the LRRK2 GTPase domain which are much common in the Indian PD cohort are not as well studied compared to the kinase domain mutations which are more common in the Caucasian cohorts. These iPSC lines, therefore, provide a valuable tool to study ethnicity based differences in the Indian PD patients.

Soham has been involved with generation and characterization of these iPSC lines in accordance with the Human Pluripotent Stem Cell Registry (hPSCreg) which were published in Stem Cell Research Journal.

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