

Advt no.: 003/CAB&HN/17.04.2019

Job Analysis

Job Description		Job Specification	
Job Title	JRF - ECR PROJECT	Qualification	M.Sc/ in Life Sciences/Agriculture sciences/ Biochemistry/Biotechnology
Job location	TDU, Bangalore	Experience	1 year
Job Summary/Title	Multi-omic approaches and mass spectrometry based tissue metabolite imaging towards understanding metabolites localisation and metabolic pathways in specific cell/tissues of key medicinal plant, <i>Dysoxylum binectariferum</i>		
Description:	<p>Advanced multi-omics technologies provide revolutionary strategies to study complex biological processes, e.g. to systematically decipher biosynthetic pathways to mechanistically challenging, structurally complex, widely used plant medicinals that cannot be economically synthesized. A multi-omics strategy is proposed to deduce biosynthetic pathway to rohitukine, a chromone alkaloid, widely used in cancer treatment. Distinct cell types involved <i>in planta</i> will be identified using mass spectrometry based metabolite imaging <i>in situ</i> and laser microscope dissection. Knowledge gained can be applied to developing synthetic biology approaches in order to obtain new sources of these compounds in other host systems.</p>		
Skills	<p>Molecular and biochemical techniques</p> <ul style="list-style-type: none"> • Experience in Isolation, purification and structural characterization of secondary metabolites, Chromatographic techniques like HPLC, GCMS and LCMS • Experience in RNA isolation, Synthesis of cDNA. PCR, RT-PCR, qPCR, cloning and transformation and bioinformatics like transcriptome data analysis 		

Project Nature (Temporary)	Temporary	Job Responsibilities <ul style="list-style-type: none"> ● Mass spectrometry analysis of metabolites ● Elucidation of key rohitukine biochemical pathways; tissue/cell type RNA sequencing of <i>D. binectariferum</i> through next generation sequencing technologies to identify the rohitukine biosynthetic pathway genes ● Characterization of key genes involved in rohitukine biosynthetic pathway from <i>D. binectariferum</i>. ● Expression analysis of genes involved in rohitukine pathway and their correlation with rohitukine content/localization in various celltypes/tissue of <i>D. binectariferum</i>. ● Writing reports and manuscripts ● Training interns
Project Duration & Budget Head	Manpower 3 Years As per SERB, DST norms Extendable to two years based on the performance	
<p>Interested candidates to apply on line in the prescribed CV format with advertisement number to: hr@tdu.edu.in on or before 29.04.2019</p>		