Name of E-YUVA center

Title of the project: Generation and characterization of tumor specific organoids for biobanking and as a model for future therapeutic strategies**.**

Start Date of Project:1/12/2022

End Date of project:30/11/2024

Scope of Project: An unmet need in cancer therapeutics and treatment is the absence of a near native human model for pre-clinical drug testing. Organoids, a three-dimensional cell cultures of organs/tissues, are newly established *in vitro*models that can be used for this purpose. This project aims to develop a drug testing platform utilizing Patient Derived Organoids (PDOs) from cancer patients and to implement this platform for pre-testing of drugs in Personalized cancer medicine. This technology can also be used in high throughput drug testing by pharmaceutical companieswhich will help to fast-track drug testing and aid to reduce the turnaround time for new drugs.

Details of New Patent's Filed:

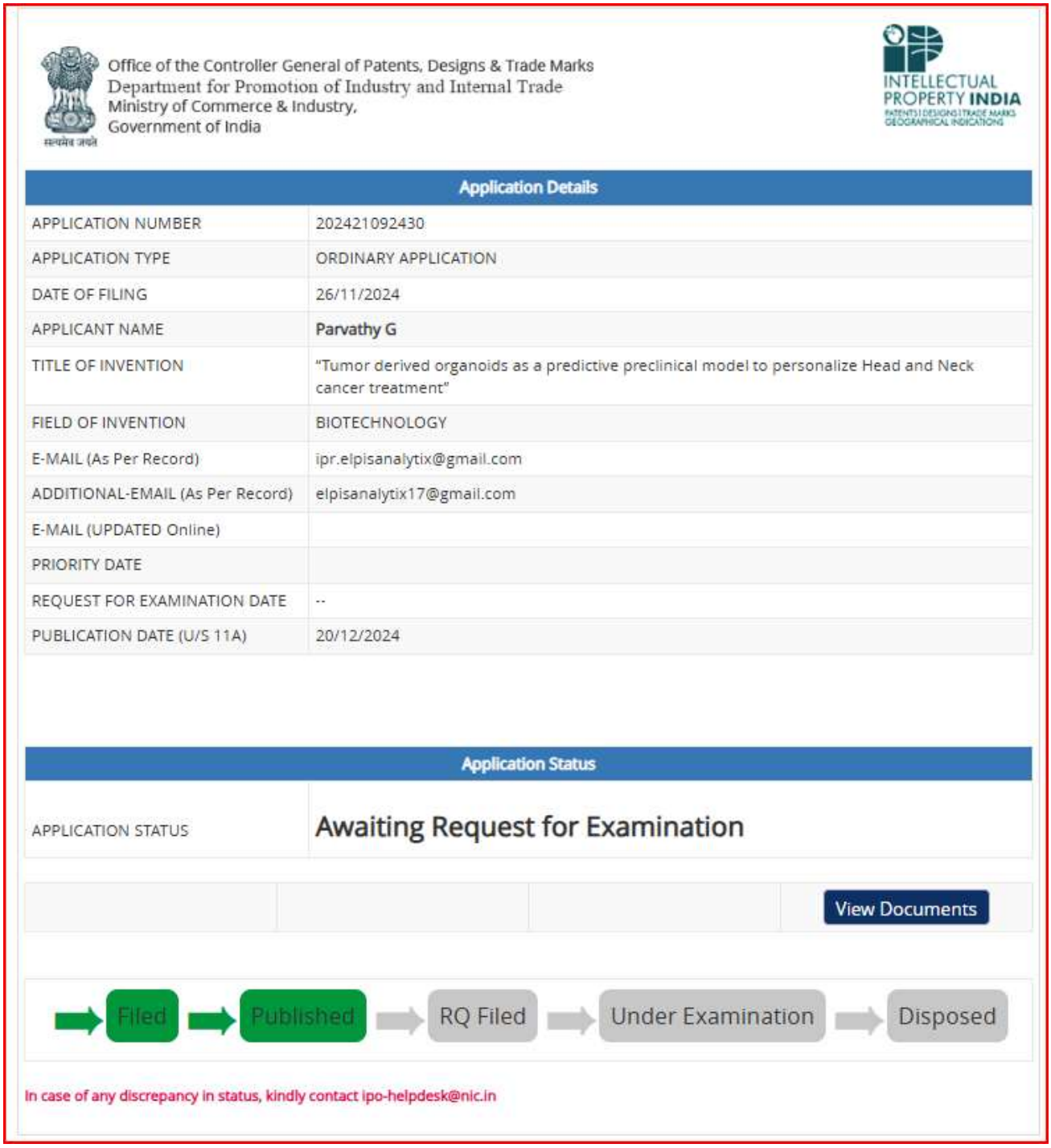
- **Indian patent Application Number:**202421092430A
- **Title of Patent Application:**TUMOR DERIVED ORGANOIDS AS A PREDICTIVE PERICLINAL MODEL TO PERSONALIZE HEAD AND NECK CANCER TREATMENT.
- **Priority Date:**26/11/2024
- **Name of Applicant:**Parvathy G
- **Abstract/Description:**

The present invention relates a kit for generating organoid cultures, comprising: A) HBSS buffer solution supplemented with 1X strength antibiotic-antimycotic solution; B) Serum-free digestion mix comprising: i) 0.125% Trypsin-EDTA; ii) 5 µM Y-27632 (Rho-kinase inhibitor); iii) Cultrex RGF BME, Type 2 (Biotechne), iv) A sterile 40 µm cell strainer for passing the tissue mixture to obtain a single-cell suspension; v) A pre-warmed 24-well plate for plating the cell-matrix mixture; and vi) Instructions for use of the kit for generating organoid cultures. The method for generating organoid cultures from tissue, comprising the steps of: i. Washing the tissue twice in HBSS buffer solution supplemented with a 1X strength antibiotic-antimycotic solution; ii. Mechanically mincing the tissue in a biosafety hood to retain sterility; iii. Adding the minced tissue to a serum-free digestion mixture comprising: 0.125% Trypsin-EDTA, 5 µM Y-27632 (Rho-kinase inhibitor), and incubating the mixture in a 37°C water bath; iv. Manually agitating the mixture every 5 minutes; v. Every 15 minutes, transferring the mixture to a biosafety hood and gently pipetting the tissue 10-12 times using a P1000 pipette with the tip ends cut; vi. After 30 minutes, taking a cell count using trypan blue dye on an Invitrogen Countess 3 Cell Counter; vii. Determining the progress of digestion based on the cell count and percentage viability; ix. Once the digestion is deemed satisfactory, stopping the digestion and passing the mixture through a 40 µm cell strainer to obtain a single-cell suspension; x. Mixing the single-cell suspension with ice-cold Cultrex RGF BME, Type 2 (Biotechne) in a ratio to achieve 1-2 × 10^4 cells per 10 µL of the matrix; xi. Plating the mixture onto pre-warmed 24-well plates, gently inverting the plate, and keeping the plate undisturbed in the biosafety hood to allow solidification of the matrix; xii. Once the matrix is solidified, adding organoid culture media to the well and incubating the plate at 37°C with 5% CO_2.

- **PCT Application number (if filed)**: NA

Details of New IP's (Copyright) Filed:

- **Application Number:**Diary no: 41784/2024-CO/L
- **Title:**Generation and characterization of tumor specific organoids for biobanking and as a model for future therapeutic strategies**.**
- **Date of filing:**31/12/2024
- **Name of Applicant:**Parvathy G
- **Description:**The project work/report is applied for copyright under the class literary/dramatic work. Application is in the mandatory waiting period of one month**.**



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Application Details	
APPLICATION NUMBER	202421092430
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	26/11/2024
APPLICANT NAME	**Parvathy G**
TITLE OF INVENTION	"Tumor derived organoids as a predictive preclinical model to personalize Head and Neck cancer treatment"
FIELD OF INVENTION	BIOTECHNOLOGY
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PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	20/12/2024

Application Status	
APPLICATION STATUS	Awaiting Request for Examination

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