

PROGRESS REPORT

SUMMER RESEARCH INTERNSHIP PROGRAM

Organized by GSBTM – Gujrat State Biotechnology Mission

Hosted by NIPER – National institute of pharmaceutical Education and Research, Hyderabad.

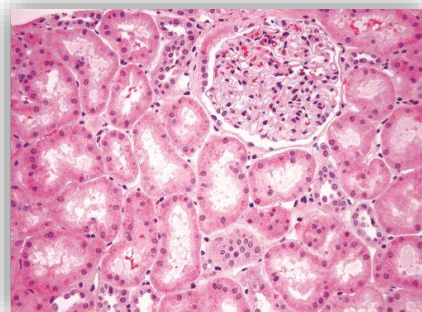
Submitted by AAYUSHI PADIA

Objective of this one month internship program was demonstration and hands on training on multiple molecular biology, chemical and Pharmaceutical techniques like :

1.HPLC – High performance liquid chromatography



2.Tissue Processing and staining : A rat / mice which has been dosed with cancerous drugs are sacrificed and their tissues are later stored and sectioned .This allows us to observe toxicity of drugs on tissues .



3.To check permeability by Franz diffusion method : It is used for drug which are in the form of gel and creams which are applied on skin or eye . Similar conditions of that of skin and eye are provided artificially and time period at which drug is absorbed is measured .



4. Formation of nanoparticles by Solvent injection method

5. Emulsion formation and pseudo ternary plotting: emulsion is a mixture of oil and water. May its water in oil or oil in water. After a certain period of time their phase gets separated. Hence certain surfactants and co surfactants are added and their amount is checked for stability. In case where our drug is oil form and it is to be applied in the place with water form {eg. eye}, stability of emulsion is important for longevity of product.

- Preparation of stock solution
- Preparation of Liposomes
- Plasma separation and blood sample collection from mice and rat through retro orbital method
- Removal of cerebrospinal fluid from rat
- Preparation of drug samples and their absorbance
- Dosing of mice at intravenous
- Co crystal formation

Various instruments were taught and allowed hands on training:

- Osmometer
- Rheometer
- Inverted microscope
- Fluorescent microscope

- Confocal microscope
- Hot stage microscope
- Scanning electron microscopy
- Sonicator
- UV visible spectrophotometer
- NMR
- Tablet puncture machine
- Magnetic stirrer
- Zeta sizer
- Cryotome
- Microtome

Interns were allowed exposure to various extracurricular activities and lectures by faculties of NIPER Hyderabad:

6. Animal handling by Dr. Nandkumar



7. Molecular docking

8. Yoga day celebration

9. Visit to US pharmacopeia



10. Introduction to incubation centre and bionest (Avishkaran) which also supports various startups .



11. A lecture on cell culture and cell lines by Dr. Dharmendra khatri: interns were introduced to cell culture lab and its lab setup. Also got to observe neural blastoma cells.



12. Demo session on Tablet Formation.