PRESENTER:
Ishita Virmani

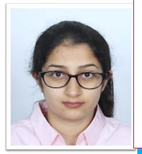


Image-Based Analysis In Toxicological Research

MUNI | RECETOX SCI

Background:

- We get exposed to chemical cocktail on the daily basis, which is discussed as one of the main reason for impairment of male reproductive system and male infertility
- Male reproductive system: less studied

Hypothesis:

Environmentally relevant mixtures can contribute to the impairment of male reproductive system.

Methods:

- Immature Leydig Tm3 and Sertoli Tm4 cell lines: Purchased from ATCC (American Type Culture Collection)

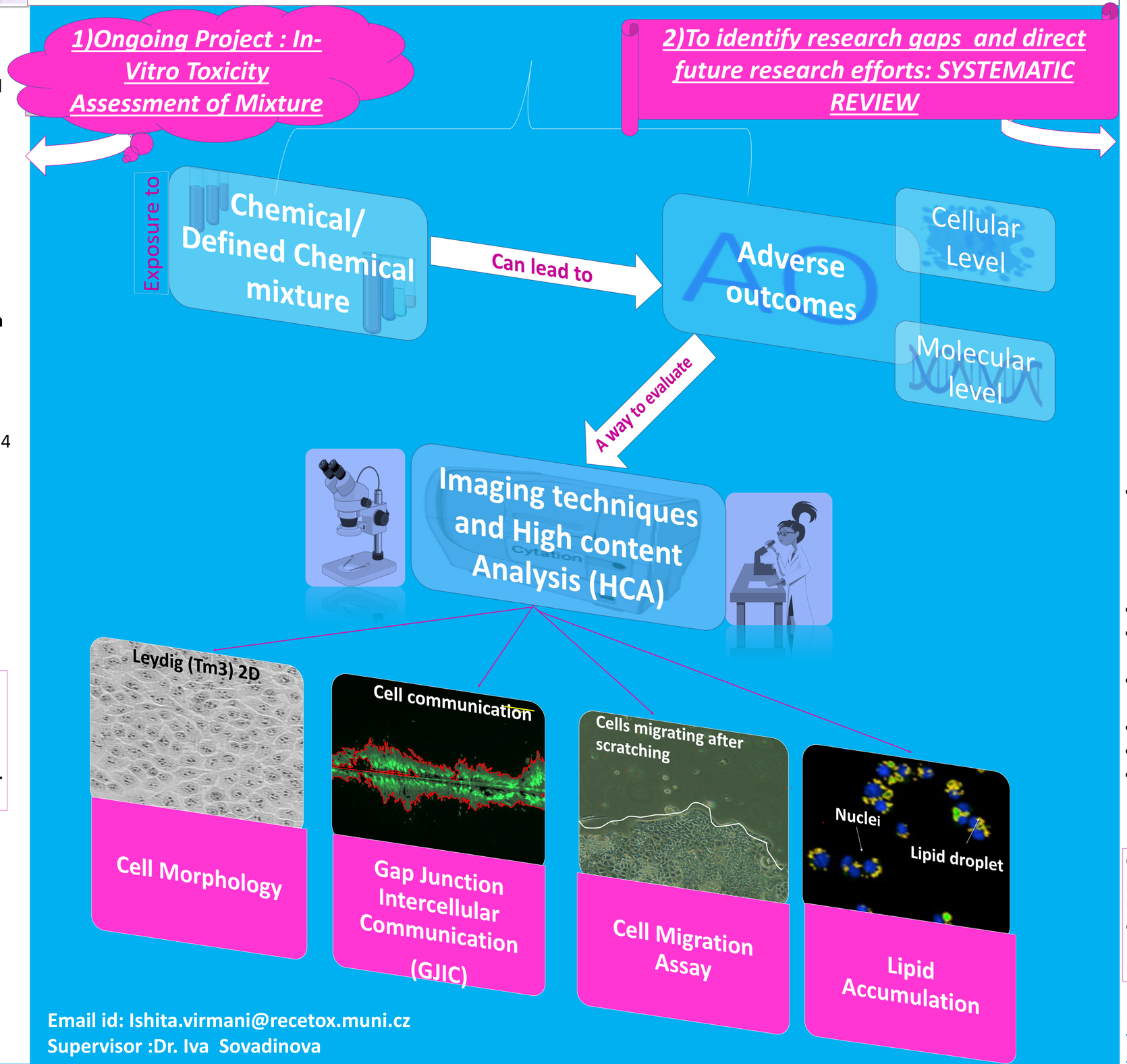
A versatile battery of multiparametric *in-vitro* assays for testicular toxicity assessment:

- Cell viability and morphology assays
- Screening for endocrine disrupting potential: reporter gene cell lines
- Multiparametric GJIC assay
- Image-based analysis of lipid droplets
- Assay for cell migration

Optimization

Preliminary Results:

- Time and concentration dependent cytotoxicity :both Leydig(TM3) & Sertoli (Tm4)
- Sertoli (Tm4) were more sensitive than Leydig (Tm3)
- Currently working on GJIC and accumulation of lipid droplets



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Background:

- Lipid droplets : involved in many diseases
- Lipid droplets : understudied organelles
- Lipid droplets: might be an important subcellular target for natural toxins and anthropogenic compounds

Hypothesis:

A research question: Can chemicals lead to adverse outcomes through disruption of the lipid droplets?

Methods:

- To formulate a problem following the **PRISMA** (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guidelines
- Search the databases
- Set inclusion and exclusion criteria for the articles
- Asses the included articles: qualitatively and quantitatively
- Perform: meta-analysis
- Identify the gaps in research
- Report the study

Click or Take a picture to have a musical overview of systematic review

https://www.youtube.com/watch?v=By3d5cXmjuc