

Gopal Narayan Singh University
Faculty of Pharmacy
Pharmacological Screenings

Course code: BPHVA3

Objective: Identification of drug candidates: Pharmacological screening allows researchers to sift through vast libraries of chemical compounds to identify those with potential therapeutic value. These compounds are subsequently developed and optimized to become new drugs.

Unit I

6 hours

Role of pharmacology in drug discovery
General principles of pharmacological screening
Animal ethics, regulations for conducting animal experimentation

Unit II

6 hours

3 R's concept, alternatives to animal experimentations, Organs-on-chips
Pharmacological screening models
Correlations between various animal models and human situations
Correlation between in-vitro and in-vivo screens
Cell- based assay, CaCo-2 cell permeability assay
Single cell gel electrophoresis assay (COMET) assay

Unit III

6 hours

Zebrafish model to screen pharmaceutical molecules
Biochemical assays

Unit IV

6 hours

Introduction to cell culture, role of genomic and proteomic techniques in the process of target identification in drug discovery, MALdiTof., microarray
High throughput screening and high content screening, transgenic animal model for drug screening

Unit V

6 hours

Specific use of reference drugs
Interpretation of results
Pharmacogenomics and Personal medicine


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