**Course: Advance Bio Informatics**

**Module Title: Lead Optimization**

**Module No: 134**

**Lead Optimization**

Optimize the desirable traits of the lead

Lead should be amenable for chemistry optimization

Methods from Lead Identification

**Lead Optimization Technologies**

Medicinal chemists conduct extensive SARs to improve potency and selectivity.

Improve physicochemical and drug-like properties.

Best molecules are advanced to animal Models & preliminary toxicology.

**LO Methods:**

De novo drug desing

Charge distribution, liphophilicity or pka of side chains and H-bonds donors and acceptors.

**SBDD**

Structure based drug design

Effective: 3-D structure of inhibitor with target known

Large no of medicines

Molecular recognition in protein ligand complexes

**Drug Like properties**

ADMET in phase 1

Filters

Bioavailability, PK, CNS

**Pre- Clinical Pharmacology & Toxicity**

Animals testing

Xenograft models

ADME/T testing and validation