

# Cultivating Safety: Toxicology 101 for Botanicals and Natural Products (BSC)

## S4 C Room

Time: 9:30-11:00

### **Welcome and Introduction**

Kick off the course with a comprehensive introduction to the significance and evolving relevance of botanical safety. Dive deep into the world where tradition meets modern science.

### **Exposure to Botanicals: Tradition vs. Modernity**

Trace the journey of botanicals from their ancient, traditional uses to their current roles in our modern world. Understand how these natural products have transformed from cultural remedies to ingredients in supplements, medicines, and cosmetics.

### **Routes of Exposure and ADME**

Discover the various ways humans are exposed to botanicals, from skin applications to oral consumption, and understand the science of Absorption, Distribution, Metabolism, and Excretion (ADME) in relation to botanicals.

### **Botanical-Drug Interactions**

Learn about the complexities of botanical-drug interactions. Dive deep into the common enzymes, such as CYP3A4, and how they can be affected by botanicals.

### **Dose Response and Its Nuances**

Navigate the intricate world of dose-response, understanding key terms like LD50, NOAEL, and LOAEL.

### **Acute and Chronic Toxicity**

Differentiate between immediate and long-term effects of chemicals. Discover how the same botanical can have varying impacts based on exposure duration.

### **Overview of Common Endpoints**

Delve into the varied endpoints that can be affected by botanicals such as genotoxicity, carcinogenicity, hepatotoxicity, neurotoxicity, cardiotoxicity, DART, and renal impacts.

### **Tools for Assaying Toxicity**

Get acquainted with the most common tools used in the scientific community to assay toxicity, including a variety of rodent studies and genotoxicity assays.

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## S4B Room:

Time: 11:00-12:30

Interactive Case Studies and Scenarios

12:30 *lunch break*