Isolation of Chemical Defense Compounds from Tropical Pioneer Plant Seeds

Variation in seed persistence among pioneer plants in the cloud forests of Costa Rica is important in maintaining forest diversity patterns. Previous studies have revealed that the soil seed bank persistence of several pioneer plant species is largely due to the presence of chemical defense compounds. Our studies have identified the active toxins in *Bocconia frutescens* as Dihydro-sanguinarine, Dihydrochelirubine, Dihydrochelerthrine, and Methoxydihydrochelerthrine. Isolation of these four compounds by extraction and column chromatography followed by mass quantification and GC-MS characterization gave evidence indicating their sequestration in the seeds.

Utilizing a bio-directed fractionation procedure, combining HPLC and fungal toxicity assays the seed extracts of *Phytolacca rivinioiides* and *Guettarda poasana* are being analyzed for the presence of active antifungal compounds.