

**O-23: RELATIONSHIPS BETWEEN CYTOTOXICITY, PLANT PROFILES, AND COMPOUND CLASSES ISOLATED IN AN ANTICANCER DRUG DISCOVERY PROJECT**

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Analyses of data comparing plant profiles, compound classes isolated, and cytotoxicity from a 15-year anticancer drug discovery project indicate significant trends in cytotoxicity relative to collection location, taxonomy, plant part, and compound classes isolated. Collections were made in tropical forests in 6 countries; Ecuador collections show higher activity than Indonesia or Peru. Interestingly, Florida collections were not statistically different than those from the more biodiverse countries studied. Collections originated from 145 plant families, with Clusiaceae, Elaeocarpaceae, Meliaceae, and Rubiaceae having low mean ED<sub>50</sub> values. Especially active genera included *Aglaia*, *Casearia*, and *Mallotus*. Roots and below-ground plant materials were more active than above-ground materials. Anthraquinones, cucurbitacins, fatty acids, flavaglines, lignans, sesquiterpenoids, and tropane alkaloids were significantly more active than oligorhamnosides and xanthonenes. Results from this study could be used to guide future plant collection endeavors.

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**Kilmer Prize Winner**