IV. Other Plants

Several other extracts were also received through the ICBG program. Bioassay guided fractionation was performed on these extracts but the fractions did not exhibit any enhancement in their activity and hence further studies on these extracts were dropped.

Thespesia populnea (MG 2341) and *Grewia lavanalensis* (MG 1189) were two extracts received from Madagascar rainforests in 2005. These extracts were weakly active at IC_{50} of 11 μg/mL and 36 μg/mL. MG 2341 is known to contain sesquiterpene lactones and quinones.[1] This extract was subjected to liquid-liquid partitioning between hexanes, CH_2Cl_2, and aqueous MeOH and further chromatographed on SPE-C_{18} column. However, after testing them on A2780 cell line, none of the fractions showed any activity. The compounds present in this plant are known to be highly air and light sensitive[2] which explained the loss of activity of the fractions and hence this extract was dropped. Similarly, *Grewia lavanalensis* lost activity on its fractionation, thereby having no potential to study it further.

Bridelia tulasneana (MG 185) belongs to the *Euphorbiaceae* family and is known to contain flavanoids, triterpenoids and cardenolide glycosides.[3] Various plants from this family have been investigated for their medicinal properties. *B. retusa* and *B. ferruginea* are known to contain compounds that possess antifungal and anti-inflammatory properties.[4, 5] The extract of the twigs of *Bridelia tulasneana* has been previously studied by Mr. Williams from our group and he isolated deoxypodophyllotoxin (**4.1**) from this extract.[6] The leaf extract of this plant has not been previously studied and hence it was selected to isolate its active components. The extract was partitioned between hexanes, CH_2Cl_2 and aqueous MeOH. The

MeOH fraction was found to be most active at IC_{50} = 14 μg/mL. This was further partitioned between BuOH and water to yield an active BuOH fraction at IC_{50} = 3.2 μg/mL. This was further separated into five fractions on C_{18} flash column that gave one active fraction (IC_{50} = 2.3 μg/mL) that was chromatographed on phenyl column using gradient elution from 50% MeOH:H_2O to 100% MeOH for 60 min. This yielded three pure fractions. ^{1}H NMR spectrum revealed that these compounds were cardenolide glycosides, like those isolated from *Roupellina boivinni*. Due to their high toxicity, further investigation on this project was terminated.

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