Partial characterization of the natural product profile of maidenhair fern, *Adiantum aleuticum*, gametophytes and sporophytes by gas chromatography/mass spectrometry

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Maidenhair ferns (genus *Adiantum*) are traditional medicinal plants that grow globally. A total of 124 pharmacologically active compounds have been reported from this genus that is comprised of roughly 200 species. The current study aims to develop an *in vitro* gametophyte culture method for the local species *Adiantum aleuticum*, and to characterize the volatile chemical emissions from *A. aleuticum* gametophytes, using gas chromatography/mass spectrometry (GC-MS). Gametophyte growth methods were established. GC-MS analysis of volatile organic compounds (VOC's) yielded no detections of plant released VOC's. The membrane bound natural product profile of *A. aleuticum* was investigated using solvent based liquid-liquid extraction techniques and characterized by GC-MS. Several classes of natural products were identified by MS in both the sporophyte and/or gametophyte samples, including: alkenes, alkynes, and terpenes.