Overview
Antibiotic and antifungal resistance is a growing concern. Novel anti-tumor compounds are continuously sought after. If a novel phytochemical can be discovered with high specificity for certain types of cancer cells, then this could be an invaluable aid to oncological medicine. Plant-based drugs (phyto-pharmaceuticals) have always made up a considerable portion of our known medicines. The search for these plant medicines often begins with anthropological/ethnobotanical research, as was the case here.

Methods
Cold extractions of the ground seeds of each Ipomoea species were made with chloroform. Seven bacteria and three fungi were obtained and cultured for multiple generations. Then, minimum inhibitory concentrations (MIC's) of the extracts were determined against the bacteria and fungi using broth microdilution (BM) techniques in a 96-well microplate. IC50's (50% inhibitory concentration) were determined for the cancer cells.

Conclusions
MIC's showed that I. alba is a strong antibacterial agent against B. cereus and E. faecalis. Additionally, this extract showed strong cytotoxicity against the breast tumor cell line MDA-MB-231.

I. Tricolor showed remarkable antifungal activity against C. neoformans, as well as very strong antibacterial activity against B. cereus and E. faecalis. This extract also showed strong cytotoxicity against both tested breast tumor cell lines (Hs 578-T and MDA-MB-231). Both I. Tricolor and I. alba seem to be great candidates for further testing as a potential antibacterial, antifungal, and anti-tumor compounds. The next step is to determine the active component(s) of the extract.