Identifying Housekeeping Gene Primers in Lodgepole Pine Dwarf Mistletoe (*Arceuthobium americanum*)

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Arceuthobium americanum (the lodgepole pine dwarf mistletoe) is considered a pest in the forestry industry, but has not been studied extensively from a genetic perspective. And while the quantification of gene expression or "exomics" can reveal important biological processes in living systems, no information regarding *A. americanum* gene expression exists. A widely used and preferred method to quantify gene expression is the reverse transcription quantitative polymerase chain reaction (RT-qPCR). Normalization of possible reference genes is necessary for the optimization of RT-qPCR to ensure relative quantification is accurate. High quality reference genes are stably expressed genes, commonly housekeeping genes, whose expressions are not affected by varying experimental conditions and thus can act as a point of reference for genes of interest. Unstably expressed reference genes may lead to inaccurate results and false conclusions in RT-qPCR experimentation. The objective of this study is to develop primers for a minimum of 4 high quality reference genes, these genes are needed to perform stability experiments in RT-qPCR. Because of the lack of exome data for this species, 15 candidate primers were developed from the model plant *Arabidopsis thaliana*, and *Arceuthobium americanum's* relative, *Arceuthobium oxycedri*. To date, an aquaporin gene primer from *Arceuthobium oxycedri* has been validated to produce an accurate RT-qPCR measurement, but may not necessarily act as a stable reference gene in RT-qPCR experiments, because 3 more reference gene primers are required for stability experimentation. Therefore, more housekeeping gene primers from closely related plants *Vitis vinifera, Solanum lycopersicum, Santalum album, and Viscum album,* will be developed and validated so that stability experimentation can continue.